DOCUMENT RESUME

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TITLE	MicroSIFT Courseware Evaluations. [Set 11 (223-259), Set 12 (260-293), and a Special Set of 99 LIBRA Reviews of Junior High School Science Software, Including Subject and Title Indexes Covering Sets 1-12 and Special Set L].
INSTITUTION	Northwest Regional Educational Lab., Portland, Oreg.
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ABSTRACT

This document consists of 170 microcomputer software package evaluations prepared by the MicroSIFT (Microcomputer Software and Information for Teachers) Clearinghouse at the Northwest Regional Education Laboratory. Set 11 consists of 37 packages. Set 12 consists of 34 packages. A special unnumbered set, entitled LIBRA Reviews, treats 99 packages designed for Junior High School Science courses. Each software review lists source, cost, ability level, subject, topic, transfer medium, required hardware, required software, instructional purpose, instructional techniques, documentation, instructional objectives (stated), instructional prerequisites (inferred), content, structure, estimated student time required, potential uses, major strengths, and major weaknesses. An evaluation summary rates each package on 21 criteria. The titles of the packages evaluated in sets 11 and 12 are as follows: Algebra Drill and Practice II; Alien Action; Basic English Skills--Sentences; Basic Number Facts (PLATO); Basic Programming; Capitalization Plus; Classify; Cloze-Plus, Level H; Computer Literacy Adventures of the Lollipop Dragon; Creating Your Own Greeting Cards; Diascriptive Reading I; Early Games for Young Children; Early Games--Fraction Factory; Early Games--Matchmaker; Early Games--Music; Early Games--Piece of Cake; Electric English Lessons; Floppy Teaches Same and Different; Floppy Teaches What Is Missing; Introductory Algebra; Key Lingo; Keyboarding for Information (PLATO); Logic and Euclidean Geometry; Logic Gates; Math 1-2-3 Four Pack--Counting; Mathfish; Processing Power Program, Level E; Quizagon; Rails West!; The Reef of Gold; Scholastic Spelling--Levels 3-6; Special Products and Algebraic Factors; Speed/Bingo Math; Stickybear ABC; The Medalists--States; U.S. Constitution Tutor; and Vectors and Graphing, Volume 1; Alabama Arcade; Alligator Alley; Beginning Composition; Budgeting Simulation; Budgeting Tutorial; Charged Particles II; Circuit Lab; Composition Strategy; Electronic Blackboard Series: Alabama; The Electronic Study Guide -- System of Equations and Inequalities; Four-Letter Words; Idea Invasion; Kinematics II; Letter Man; Number Bowling/Space Journey; Numeration 1; Numeration 2; Nutrition Simulation; Nutrition Tutorial; Orbit II; Picnic; Projectiles II; Pyramid Puzzler; Ship Ahoy/Word Scramble; Star Maze; Tellstar; That's My Story; Tribbles; Typing Strategy; Vector Addition II; Wave Addition II; Wiz Works; Mathematics Life Skills, Volume 2: World of Work; 50 Defense vs. Run. (LMM)

ED249918

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MicroSIFT Courseware Evaluations

[Set 11 (223-259), Set 12 (260-293), and a Special Set of 99 "Libra" Reviews of Junior High School Science Software. Including Subject and Title Indexes Covering Sets 1-12 and Special Set L].

IR-011320

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MICROSIFT EVALUATIONS: SET 11 (223-259)

TITLE	PRODUCER	HRD	LEVEL	SUBJECT	PRICE
ALGEBRA DRILL AND PRACTICE II	CONDUIT	AP	M H	MATHEMATICS	125.00
ALIEN ACTION	DLM	AP	E	MISC.	39.00
BASIC ENGLISH SKILLS: SENTENCE	ENCYCLOPEDIA BRITANNICA	AP	E M	LANGUAGE ARTS	349.00
BASIC NUMBER FACTS	CONTROL DATA	AP	E	MATHEMATICS	49.95
BASIC PROGRAMMING	ORION TRAINING SYSTEMS	AP	M H	COMPUTER SCIENCE	69.95
CAPITALIZATION PLUS	MICROCOMPUTER WORKSHOPS	AP	E M H	LANGUAGE ARTS	39.95
CLASSIFY	DIVERSIFIED EDUCATIONAL ENT.	AP	H	SCIENCES	70.00
CLOZE-PLUS, LEVEL H	I/CT, INC.	AP	M	LANGUAGE ARTS	150.00
DIASCRIPTIVE READING I	EDUCATIONAL ACTIVITIES	AP	E	LANGUAGE ARTS	295.00
EARLY GAMES FOR YOUNG CHILDREN	SPRINGBOARD SOFTWARE	AP	P	READINESS	29.95
EARLY GAMES: FRACTION FACTORY	SPRINGBOARD SOFTWARE	AP	E M	MATHEMATICS	29.95
EARLY GAMES: MATCHMAKER	SPRINGBOARD SOFTWARE	AP	P	LANGUAGE ARTS	29.95
EARLY GAMES: MUSIC	SPRINGBOARD SOFTWARE	AP	E	MUSIC	29.95
EARLY GAMES: PIECE OF CAKE	SPRINGBOARD SOFTWARE	AP	E M	MATHEMATICS	29.95
ELECTRIC ENGLISH	TIES	AP	M	LANGUAGE ARTS	150.00
FLOPPY TEACHES WHAT IS MISSING	FLOPPY ENTERPRISES	AP	P	READINESS	29.95
GREETING CARDS	COMPUTER SKILL BUILDERS	AP	E M H	LANGUAGE ARTS	39.95
INTRODUCTORY ALGEBRA	AVANT-GARDE CREATIONS	AP	M H	MATHEMATICS	29.95
KEY LINGO	READER'S DIGEST	AP	M H	LANGUAGE ARTS	39.95
KEYBOARDING FOR INFORMATION	CONTROL DATA	AP	E M H	BUSINESS	49.95
LOGIC AND EUCLIDEAN GEOMETRY	AVANT-GARDE CREATIONS	AP	H	MATHEMATICS	29.95
LOGIC GATES	TIES	AP	H	SCIENCES	40.00
LOLLIPOP DRAGON	SVE	AP	P	COMPUTER SCIENCE	359.00
MATH 1-2-3 FOUR PACK: COUNTING	MICRO-ED	CO	P	MATHEMATICS	34.95
MATHFISH	DENNIS SONIUS	CO	E	MATHEMATICS	12.95
PROCESSING POWER PROGRAM	I/CT, INC.	AP	E	LANGUAGE ARTS	180.00
QUIZAGON	SPRINGBOARD SOFTWARE	AP	H	MISC.	39.95
RAILS WEST!	STRATEGIC SIMULATIONS, INC.	AP	M H	SOCIAL STUDIES	39.95
SAME AND DIFFERENT	FLOPPY ENTERPRISES	AP	P	READINESS	29.95
SCHOLASTIC SPELLING	SCHOLASTIC	TI	E	LANGUAGE ARTS	69.95
SPECIAL PRODUCTS & ALG. FACTOR	AVANT-GARDE CREATIONS	AP	H	MATHEMATICS	29.95
SPEED/BINGO MATH	COMMODORE	CO	E M	MATHEMATICS	19.95
STICKYBEAR ABC	WEEKLY READER FAMILY SOFTWARE	AP	P	LANGUAGE ARTS	39.95
THE MEDALIST - STATES	HARTLEY COURSEWARE	AP	E M	SOCIAL STUDIES	39.95
THE REEF OF GOLD	ENCYCLOPEDIA BRITANNICA	AP	E	LANGUAGE ARTS	49.00
U.S. CONSTITUTION TUTOR	MICRO LAB LEARNING CENTER	CO	M H	SOCIAL STUDIES	30.00
VECTORS AND GRAPHING, VOL. 1	CROSS EDUCATIONAL SOFTWARE	AP	H	SCIENCES	15.00

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micro SIFT COURSEWARE EVALUATION

Algebra Drill and Practice II

VERSION: Apple II

PRODUCER: Conduit
The Univerity of Iowa
Oakdale Campus
Iowa City, IA 52242

EVALUATION COMPLETED: June 1984 by the staff and constituents of Region 10 ESC, Richardson, Texas.

COST: $125.00

ABILITY LEVEL: Grade 8 through postsecondary
SUBJECT: Mathematics
TOPIC: Algebra
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II or II Plus, disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, remediation
INSTRUCTIONAL TECHNIQUES: drill and practice

DOCUMENTATION AVAILABLE: In program — suggested grade/ability level(s), prerequisite skills or activities, sample program output, program operating instructions, teacher's information, student's instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED and INFERRED) To provide algebra drill and practice as a supplement to algebra instruction.

INSTRUCTIONAL PREREQUISITES: (STATED) Elementary algebra instruction.

CONTENT AND STRUCTURE: This package contains two disks, an instructor's guide, and a student guide. Students can choose from 9 different types of algebra problems, each at 2 levels of difficulty. The instructor can prescribe types of problems and levels of difficulty for students with varying algebra abilities. Summary results are shown after each practice segment.

ESTIMATED STUDENT TIME REQUIRED: 10 minutes or more per exercise.

POTENTIAL USES: Drill and practice for multi-difficulty problems.

MAJOR STRENGTHS: As a drill and practice program on Algebra it is very effective.

MAJOR WEAKNESSES: There is not enough feedback to students on problems attempted. Needs clearer indications of how to solve the problems.

OTHER COMMENTS: It is a good program.

EVALUATION SUMMARY

SA	A	D	SD	NA	
•					Content is accurate.
•					Content has educational value.
•					Content is free of stereotypes.
•					Purpose of package is well defined.
•					Package achieves defined purpose.
	•				Content presentation is clear and logical.
	•				Difficulty level is appropriate to audience.
	•				Graphics/sound/color are used appropriately.
	•				Use of package is motivational.
	•				Student creativity is effectively stimulated.
		•			Feedback is effectively employed.

SA	A	D	SD	NA	
	•				Learner controls rate and sequence.
•					Instruction integrates with prior learning.
	•				Learning can be generalized.
	•				User support materials are comprehensive.
	•				User support materials are effective.
	•				Information displays are effective.
	•				Users can operate easily and independently.
	•				Teachers can employ package easily.
	•				Computer capabilities are used appropriately.
	•				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

Alien Action

VERSION: Apple

PRODUCER: DLM, Inc.
P.O. Box 4000
Allen, TX 75002

EVALUATION COMPLETED: June 1984 by the staff and constituents of Oregon Total Information System (OTIS), Eugene, Oregon.

COST: $39.00

ABILITY LEVEL: Grade 1 through postsecondary
SUBJECT: Miscellaneous
MEDIUM OF TRANSFER: 5-1/4 in. disk (Apple), ROM Cartridge (TI 99/4A)
REQUIRED HARDWARE: 48K Apple II Family, single disk drive, monitor, game paddles or joysticks (optional). Also available for TI 99/4A.
REQUIRED SOFTWARE: Apple — Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, game, content control

DOCUMENTATION AVAILABLE: In program — program operating instructions, teacher's information, student's instructions. In supplementary materials — instructional objectives, program operating instructions, teacher's information, student worksheets.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide drill and practice in identification of the correct answers to items.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students must have prior instruction on concepts covered by game items.

CONTENT AND STRUCTURE: The package consists of a manual, one diskette, and a set of reproducible worksheet and record keeping masters. Alien Action is one of six programs in the Arcademic Drill Builders series. Each program is designed around a microcomputer program game format into which you can put specific content. Your ideas become the game's content and the focus of drill and practice activities. Alien Action can be used in a school or a home setting to provide individually tailored learning experiences. Alien Action is based on DLM's Alien Addition program from the Arcademic Skill Builders in Math series. Using an "alien invasion" theme, invading spaceships with addition facts move down the screen toward a laser-equipped cannon on a platform at the bottom. Answers are typed in the cannon and the spacebar is pressed to "equalize" the invaders. In Alien Action, you will be able to select and type the items which will appear in the game. Students select the correct answers for items that appear in the spaceships. You may use

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
				●	Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

One evaluator indicated that he/she would use or recommend use of this package with little or no change. One evaluator indicated that he/she would not use or recommend use of this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 4, Technical Characteristics - 5.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Alien Action, continued

a variety of items which represent math problems, symbols, or words as content in Alien Action. A sample game is included in the program, allowing you and your players to see the way the game appears on the screen and how it is played. Directions for creating your own content items and answers are provided. When you create a game list, your game will operate exactly as the sample game does.

ESTIMATED STUDENT TIME REQUIRED: Teacher determined based on content chosen.

POTENTIAL USES: This package could be used as a supplemental activity to provide review and practice for math concepts, or as a game or reinforcement activity for successful completion of a task or primary learning activity.

MAJOR STRENGTHS: The ability for teachers to determine the content to meet individual student needs and alter it as indicated by student performance. The game format is challenging and inviting to students.

MAJOR WEAKNESSES: There are limited matching capabilities when a teacher is writing the content. There are 5 character spaces per item and 3 character spaces for the answer. This is sufficient for basic math facts drills only. The game format requires that students move the gun to the
correct location below the target, then choose the correct answer, and finally hit the spacebar to fire. For some slower or remedial students the manual dexterity required can be an added frustration.

OTHER COMMENTS: One reviewer stated, "I personally do not like the shooting aspect of the game. The manual does not speak of killing the invaders or even shooting them but rather, '. . . the space bar is pressed to equalize the invaders.' The game caused my students to react tensely and very competitively with each other."

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Basic English Skills: Sentences

PRODUCER: Encyclopedia Britannica
Educational Corporation
425 N. Michigan Avenue
Chicago, IL 60611

EVALUATION COMPLETED: June 1984 by the staff and constituents of Region 10 ESC, Richardson, Texas.

COST: $349.00

ABILITY LEVEL: Grades 5 through 10
SUBJECT: Language Arts
TOPIC: Grammar
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment, assessment
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, student worksheets.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide practice in identifying, classifying, and correctly using the parts of a sentence.

INSTRUCTIONAL PREREQUISITES: (STATED) Students should be able to read at a sixth grade reading level and to identify the parts of speech.

CONTENT AND STRUCTURE: The BASIC ENGLISH SKILLS: SENTENCES package consists of eight diskettes and a teacher's manual. The diskettes comprise 23 lessons that focus on aspects of sentence structure. The breakdown of topics and lessons by diskette is as follows: Subjects and Predicates, Objects, Complements, Agreement, and Phrases and Clauses. A lesson consists of an introductory tutorial section that includes functional and unscored reinforcement questions, followed by one or more practice sets that evaluate student performance. Each lesson takes approximately 20 to 40 minutes to complete.

ESTIMATED STUDENT TIME REQUIRED: 35 minutes for each disk lesson.

POTENTIAL USES: The package could be used as reinforcement of concepts following regular classroom instruction. The package would be helpful as an enrichment tool for the upper grade students.

MAJOR STRENGTHS: The package provides very good coverage of the concepts in the lessons. The student could work on task independently.

MAJOR WEAKNESSES: There could be a better variety of correct responses.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
●					Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
●					Learner controls rate and sequence.
●					Instruction integrates with prior learning.
●					Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Basic Number Facts (PLATO)

VERSION: Apple II Plus

PRODUCER: Control Data Publishing Company
3111 Sibley Memorial Drive
Eagan, MN 55121
1-800-233-3784 Ext. 142
In MN call collect:
612-921-4494 Ext. 142

EVALUATION COMPLETED: June 1984 by the staff and constituents of Region 10 ESC, Richardson, Texas.

COST: $49.95

ABILITY LEVEL: Grades 3 through 6
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Plus, Atari 800, TI 99/4A disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice, game, simulation

DOCUMENTATION AVAILABLE: In program — student worksheets, textbook correlation, follow-up activities. In supplementary materials — student worksheets, textbook correlation, follow-up activities.

INSTRUCTIONAL OBJECTIVES: To provide drill and practice with basic number facts from 0-10.

INSTRUCTIONAL PREREQUISITES: (INFERRED) A beginning knowledge of number facts.

CONTENT AND STRUCTURE: This package contains a circulation disk, a backup disk and a 50-page user's guide. It provides practice in addition, subtraction, multiplication, and division in an auto racetrack format. The student races against himself/herself with a bar graph score shown after each exercise.

ESTIMATED STUDENT TIME REQUIRED: It would be around 10-15 minutes a day.

POTENTIAL USES: A teacher would use this in the classroom for drill and practice in addition, subtraction, multiplication and division. You can also have a mixture of the four operations.

MAJOR STRENGTHS: It is highly motivational. It has great graphics.

MAJOR WEAKNESSES: None stated.

OTHER COMMENTS: This is great for little kids!

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.
●					Student creativity is effectively stimulated.
●					Feedback is effectively employed.

SA	A	D	SD	NA	
●					Learner controls rate and sequence.
●					Instruction integrates with prior learning.
●					Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

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Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro|SIFT COURSEWARE EVALUATION

Basic Programming

VERSION: Apple II

PRODUCER:
Orion Training Systems
P.O. Box 94
Dallastown, PA 17313

EVALUATION COMPLETED: January 1984 by staff and constituents of Florida Department of Education, Tallahassee, Florida, and Oregon Total Information System, Eugene, Oregon.

COST: $69.95

ABILITY LEVEL: Grades 7 through postsecondary
SUBJECT: Computer Science
TOPIC: Programming
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Apple II Family, disk drive, monitor, printer. Also available for Commodore 64 ($49.95) and Macintosh ($99.95).
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial

DOCUMENTATION AVAILABLE: In program — Instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, textbook correlation. In supplementary materials — Instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, textbook correlation.

INSTRUCTIONAL OBJECTIVES: (STATED) To teach the concept of BASIC programming and BASIC commands.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need knowledge of operating an Apple, disk handling, reading, and keyboarding skills.

CONTENT AND STRUCTURE: The package contains four disks which lead the user through the major programming features of BASIC. Each lesson begins with a list of lesson objectives and several supplementary exercises in the documentation manual. After a concept is presented, a drill and practice exercise is provided. Each of the lessons contains a quiz module and supplementary practice exercises are provided. The solutions are given immediately following the exercises. At the conclusion of each lesson, an overview is given explaining concepts to be developed in the following lesson.

ESTIMATED STUDENT TIME REQUIRED: About 30 hours total.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
				●	Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

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300 S.W. Sixth Avenue • Portland, Oregon 97204
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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Basic Programming, continued

POTENTIAL USES: This package teaches the concepts of BASIC programming. The package is designed for individualized instruction and would be a good supplement to lessons in BASIC.

MAJOR STRENGTHS: The material in this program, is presented in a logical sequence. Information displays are effective, and the documentation is easy to understand. Supplementary exercises are provided and are an asset to the package. This program requires little teacher supervision.

MAJOR WEAKNESSES: The menu set up is cumbersome as far as moving around in the program. The feedback is not varied. When the user asks for additional help after an incorrect answer, the help that is provided is the same as given previously in the text. An answer that is correct in syntax is not accepted as correct if it is not spaced as the programmer intended.

COMMENTS: Minimal use of color and sound are used in the program.

micro SIFT COURSEWARE EVALUATION

Capitalization Plus

VERSION: Apple

PRODUCER: Microcomputer Workshops Corp.
225 Westchester Avenue
Port Chester, NY 10573

EVALUATION COMPLETED: June 1984 by the staff and constituents of Region 10 ESC, Richardson, Texas.

COST: $39.95

ABILITY LEVEL: Grades 5 through 12
SUBJECT: Language Arts
TOPIC: Punctuation
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, or IIe, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, content control

DOCUMENTATION AVAILABLE: In program — program operating instructions. In supplementary materials — suggested grade/ability level, sample program output, program operating instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To build capitalization skills.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior exposure to general sentence structure and at least fifth grade reading level.

CONTENT AND STRUCTURE: CAPITALIZATION PLUS covers 38 capitalization rules and generates over 815,000 different sentences. These sentences are constructed out of sentence "forms" into which are placed nouns or phrases that may or may not need to be capitalized. These nouns and phrases are divided into lists that the teacher can change or edit to meet class needs. The teacher can, for example, change the Person List so that the names of the students in the class appear in the problems. Or she/he can insert the name of the school, the streets of the town, or the name of the town itself! There are 33 lists that the teacher can edit, each corresponding to a different rule. The program is divided into five parts, four of which are designed for student use. (The fifth allows the teacher to edit the word lists.) The four student parts consist of studying the rule, doing the exercise, doing the diagnostic test, and reviewing the rules.

ESTIMATED STUDENT TIME REQUIRED: 5 to 6 weeks if used daily.

POTENTIAL USES: Reviewers recommend that this package be used by individual students as a tutorial and for remedial work. The best audience level for this program as a tutorial is suggested as third to sixth grades. Its use at seventh to ninth grades would be for remedial purposes.

MAJOR STRENGTHS: The program was commended by reviewers because teachers can edit the software to meet the needs of individual students. Reviewers also liked the immediate feedback given to students and the breadth of grammatical rules covered.

MAJOR WEAKNESSES: The program runs slowly.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
				●	Student creativity is effectively stimulated.
●					Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
●					Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

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Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Classify

VERSION: Apple, copyright 1982

PRODUCER: Diversified Educational Enterprises, Inc.
725 Main Street
Lafayette, IN 47901

EVALUATION COMPLETED: June 1984 by the staff and constituents of TIES, Roseville, Minnesota.

COST: $70.00

ABILITY LEVEL: Grade 9 through postsecondary
SUBJECT: Sciences
TOPIC: Biology
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, disk drive, monitor. Also available for 32K TRS-80, 64K or 128K IBM-PC with color/graphics adaptor; and IBM-PCjr.
REQUIRED SOFTWARE: Apple: Applesoft, DOS 3.3; IBM: 64K needs PC-DOS 1.1; 128K needs PC-DOS 2.0; IBM-PCjr. needs PC-DOS.
INSTRUCTIONAL PURPOSE: Standard instruction

INSTRUCTIONAL TECHNIQUES: Laboratory tool, problem solving
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, decision making.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, prerequisite skills/activities, program operating instructions, post-test, teacher's information, student worksheets, textbook correlation.

INSTRUCTIONAL OBJECTIVES: (STATED) 1) Given a set of classification groups and their characteristics, the student will be able to construct a dichotomous key for those groups. 2) The student will be able to use a dichotomous key to correctly classify a set of real or imaginary organisms. 3) Given a set of three organisms, the student will be able to use a dichotomous key to determine which two are most closely related.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
			●		Graphics/sound/color are used appropriately.
			●		Use of package is motivational.

SA	A	D	SD	NA	
			●		Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package was unreasonable compared with its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 3, Technical Characteristics - 3.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Classify, continued

INSTRUCTIONAL PREREQUISITES: (STATED) Students need to know the terms and nomenclature for the structure and characteristics they may encounter in the laboratory, or at the least know how to find out what they are.

CONTENT AND STRUCTURE: CLASSIFY is a student-interactive simulation which deals with the classification of living organisms. The program permits the student to construct a dichotomous key to classify organisms into the five kingdoms of living organisms (Monera, Protista, Fungi, Plantae, and Animalia). The computer presents an unclassified set of characteristics and labels for classification at various levels. By looking for patterns, grouping characteristics appropriately, and assigning correct labels, the student comes to understand the underlying logic of classification keys. The computer program is integrated with a laboratory guide which enables the student to apply classification strategies to actual organisms.

POTENTIAL USES: This package may be used as a classification aid in senior high or college. The terms are too difficult to be used below senior high and may be too difficult for most senior high students.

ESTIMATED STUDENT TIME REQUIRED: The package takes only a few minutes to classify one organism. Student can spend varying amounts of time classifying several organisms.

MAJOR STRENGTHS: The programming appears free of errors. The content appears accurate. The support materials are very good.

MAJOR WEAKNESSES: The readability level is too difficult. Screens could be designed in a more interesting manner. This version of the program seems to be an information/retrieval instrument on characteristics of kingdoms and phylums. This could be done almost as well using a taxonomy chart. Information on subphylums, classes and subclasses would be a nice addition and make completion of student tasks in the support materials easier. Tutorial information about characteristics before classification would be a program enhancement. Additional ways to access this information would also add to the value of the software.

OTHER COMMENTS: Examples should be added, as well as a way to escape back to the previous levels of the hierarchy if the student has gone "down the wrong branch." The addition of graphics and color to illustrate characteristics would also be a nice enhancement. The test could be placed on the computer, rather than included in the student guide.

micro SIFT COURSEWARE EVALUATION

Cloze Plus Program, Level H

PRODUCER:
Instructional/Communications Technology, Inc.
10 Stepar Place
Huntington Station, NY 11746

Milliken Publishing Company
1100 Research Blvd.
P.O. Box 21579
St. Louis, MO 63132-0579

EVALUATION COMPLETED: June 1984 by the staff and constituents of Oregon Total Information System (OTIS), Eugene, Oregon.

COST: $150.00 for four diskettes (one level)

ABILITY LEVEL: Grade 8
SUBJECT: Language Arts
TOPIC: Reading
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II or II plus, single disk drive, monitor, printer (optional)
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, assessment, instructional management
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial

DOCUMENTATION AVAILABLE: In program — program operating instructions, teacher's information, student instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) The program develops and improves: the ability to integrate meaning across sentences, the ability to understand an extended passage, contextual analysis strategies, predictive abilities, and test-taking techniques.

INSTRUCTIONAL PREREQUISITES: (STATED) An independent reading level of 4 or higher.

CONTENT AND STRUCTURE: The Cloze-Plus Program is made up of 6 sets of diskettes. The sets span reading levels three through eight and are coded by letter, i.e., C (level 3), D (level 4), etc. Each set is made up of four diskettes containing twenty Cloze-Plus lessons. Each diskette contains five lessons and a Manager Program. The Teacher's Guide provides ten rationale on which the Cloze-Plus Program is based, describes the lesson, provides guidelines for determining entry level and placement, and details exact instructions for use of the Manager Program. Scheduling suggestions, recommendations for skill reinforcement activities and orientation procedures are also

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Cloze Plus Program, Level H, continued

provided. Each diskette in the package contains a manager feature which can maintain individual records for up to 100 students. These records can be arranged in up to 5 classes. The Manager Program allows the teacher to: make individual assignments, review individual and class performance, receive printed records of student performance, and provides a security system which keeps all teacher and student data confidential.

ESTIMATED STUDENT TIME REQUIRED: 30-45 minutes per week.

POTENTIAL USES: The package could be used in a 6th to 8th grade reading class as an enrichment activity for vocabulary development.

MAJOR STRENGTHS: The topics are highly motivational for the intended age group. The verbal and graphic reinforcements are well done. The students are challenged to use a number of reading skills (opposites, pronoun referents, similarities/differences, definitions, associations, and drawing conclusions). The students are intrigued by trying to figure out what the graphic illustration will be when completed.

MAJOR WEAKNESSES: The program can be difficult to get into and therefore may cause some initial problems requiring an aid or teacher to be readily available for assistance.
OTHER COMMENTS: $150 seems too high for this activity. This package was designed using a structured cloze format, and , therefore, offers no provisions for modification by the teacher.

Diascriptive Reading I

VERSION: Apple

PRODUCER: Educational Activities Inc.
P.O. Box 392
Freeport, NY 11520

EVALUATION COMPLETED: June 1984 by the staff and constituents of Region 10 ESC, Richardson, Texas.

COST: $295.00

ABILITY LEVEL: Grades 1 through 6
SUBJECT: Language Arts
TOPIC: Reading
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, printer, single disk drive, monitor. Also available for TRS-80 III, Commodore 64, Atari 800, and PET.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, assessment, instructional management
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial

DOCUMENTATION AVAILABLE: In program — program operating instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, sample program output, program operating instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To diagnose the reading skills of each student, prescribe what is needed for improvement, and to evaluate the performance on each exercise.

INSTRUCTIONAL PREREQUISITES: (STATED) The student must read at the 1.5 to 2.0 grade level.

CONTENT AND STRUCTURE: The programs diagnose the reading skills of each student, prescribe what is needed for improvement, and evaluate performance at each level before directing the student to the next program. If the student did poorly, he/she will be directed to a lower level program for remediation. If he/she did well, the student will be directed to a higher level program for further developmental activities. Each of the developmental lessons contains short, informative selections, such as charts, paragraphs, etc. The student must clearly read the selections and respond to questions. Each lesson is self directing and self correcting, and focuses on one reading skill for one specific level. Students receive immediate reward or instruction using graphics animation for reinforcement. The management system provides a means for students to be added and deleted from the class records. It records a student's progress on the disk and will remediate or

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.
		●			Student creativity is effectively stimulated.
●					Feedback is effectively employed.

SA	A	D	SD	NA	
●					Learner controls rate and sequence.
●					Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
●					User support materials are effective.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

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Diascriptive Reading I, continued

advance the student through each skill area without teacher intervention. The teacher can obtain individual scores, a summary of scores or a print out of the summary for all the diagnostic results. The system can be used over and over again with students being added or deleted. Included in the package: one diagnostic disk, five skill area disks (Vocabulary, Sequence, Details, Inference, and Main Idea), one teacher's guide, and reproducible student and class record sheets.

ESTIMATED STUDENT TIME REQUIRED: 20 minutes each sitting.

POTENTIAL USES: This package is good for placement, instruction, reinforcement and enrichment.

MAJOR STRENGTHS: The package is simple to use and motivational. The recordkeeping is easy.

MAJOR WEAKNESSES: The program needs to have more stories at each level or users should have the option to input their own stories.

Early Games for Young Children

VERSION: Apple, Copyright 1983

PRODUCER: Springboard Software Inc.
7807 Creekridge Circle
Minneapolis, MN 55435

EVALUATION COMPLETED: May 1984 by the staff and constituents of North Clackamas School District, Milwaukie, Oregon.

COST: $29.95

ABILITY LEVEL: Preschool through grade 1
SUBJECT: School Readiness
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, single disk drive, color monitor. Also available for IBM-PC, Atari (disk or cassette), and Commodore 64 (disk or cassette), TRS-80 Color, disk, TRS Model I/III, cassette
REQUIRED SOFTWARE: Apple — Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, game, problem solving.

DOCUMENTATION AVAILABLE: In program — program operating instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To help develop school readiness skills in the areas of reading, math, and computer literacy.

INSTRUCTIONAL PREREQUISITES: None.

CONTENT AND STRUCTURE: This package includes nine learning games. No adult supervision is necessary. The Picture Menu allows children to select a game, play it, and go to a different game. . . all by themselves. They can match large, colorful numbers and letters, add or subtract stacks of blocks, work with the alphabet, learn to type their own names, compare shapes, and create colorful pictures. These games will also provide a comfortable introduction to the computer.

POTENTIAL USES: The teacher inputs the answer into the computer. This makes the child look and say the names of letters and numbers so you can incorporate recognition, not just visual matching. This also helps speed things up for students who are not familiar with the keyboard. Young students will need a longer time to locate all the keys each time.

MAJOR STRENGTHS: The picture menu was cited by reviewers as a strength of the package.

MAJOR WEAKNESSES: The activities are repetitious, and have no variations. The formation of letters and numbers is poor. The whole math sentence is never displayed on addition and subtraction activities. The correct answer is never given.

OTHER COMMENTS: Evaluators suggested leaving objects up when numeral is presented in "counting activity." They also suggested that the teacher be allowed to input more than one name on the "names" activity. The program should designate specific keys for up/down/right/left in the "draw" program. Use of "any" key is confusing.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	•				Content is accurate.
	•				Content has educational value.
				•	Content is free of stereotypes.
		•			Purpose of package is well defined.
	•				Package achieves defined purpose.
	•				Content presentation is clear and logical.
	•				Difficulty level is appropriate to audience.
	•				Graphics/sound/color are used appropriately.
		•			Use of package is motivational.
		•			Student creativity is effectively stimulated.
		•			Feedback is effectively employed.

SA	A	D	SD	NA	
		•			Learner controls rate and sequence.
	•				Instruction integrates with prior learning.
	•				Learning can be generalized.
		•			User support materials are comprehensive.
	•				User support materials are effective.
		•			Information displays are effective.
	•	•			Users can operate easily and independently.
	•				Teachers can employ package easily.
		•			Computer capabilities are used appropriately.
	•				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 2, Technical Characteristics - 2.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Early Games: Fraction Factory

VERSION: Apple, Copyright 1983

PRODUCER: Springboard Software, Inc.
7807 Creekridge Circle
Minneapolis, MN 55435

EVALUATION COMPLETED: June 1984 by the staff and constituents of North Clackamas School District, Milwaukie, Oregon.

COST: $29.95

ABILITY LEVEL: Grades 2 through 9
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, disk drive, color monitor. Also available for IBM-PC, Atari, and Commodore 64 (disk or cassette).
REQUIRED SOFTWARE: Apple — Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, game

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To introduce the basic elements of fractions.

INSTRUCTIONAL PREREQUISITES: (INFERRED) To have a basic grasp of whole number operations.

CONTENT AND STRUCTURE: In these fraction games, children learn to describe fractions, find equal values with different denominators, multiply whole numbers by a fraction, add fractions to fractions, and subtract fractions from fractions. Colorful graphics and musical sounds help children understand what the numbers mean. Immediate feedback is given in each presentation. When a problem is missed, it is then presented up to three times with increasing degrees of help in the form of sound, color, and animation. The hints are designed to help children master the fraction concepts and apply them. Another feature of the program is the picture menu which enables children to select a game.

MAJOR STRENGTHS: The ESC key is particularly valuable because it allows you to exit any game and return to the picture menu. The reinforcement in Adding and Subtracting Fractions is very good due to the fact that it plays a tune rather than just random notes.

MAJOR WEAKNESSES: In several of the games the reinforcement for solving a problem correctly lacks variation. FRACTIONS and SETS: The program switches from accepting any answer (not reduced) to accepting only answers in lowest terms. It does not let the child know that his/her answer is correct but needs to be reduced. This is confusing. FRACTIONS OF A NUMBER: Relying on practice, the student can answer problems easily without really learning the math concept of how to calculate fractional parts of numbers. The "help" is not really clear. ADDING AND SUBTRACTING FRACTIONS: The program does not teach the concept enough to do problems without a number line.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●	●			Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●	●			Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
		●			Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would not use or recommend use of this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Early Games: Matchmaker

VERSION: Copyright 1983, Commodore 64

PRODUCER: Springboard Software Inc.
7807 Creekridge Circle
Minneapolis, MN 55435

EVALUATION COMPLETED: July 1984 by the staff and constituents of Florida Department of Education, Tallahassee, Florida.

COST: $29.95

ABILITY LEVEL: Kindergarten through Grade 1
SUBJECT: Reading
TOPIC: School Readiness
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Commodore 64, single disk drive and color monitor. Also available for Apple IIe or IIc, IBM-PC, and Atari.
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, game

DOCUMENTATION AVAILABLE: In supplementary materials — Suggested grade/ability level(s), instructional objectives, program operating instructions, teacher's information, student's instructions

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide practice in discrimination skills involving colors, shapes, sizes and directions.

CONTENT AND STRUCTURE: Matchmaker guides children through a series of discrimination games involving colors, shapes, sizes and directions. Musical sounds combine with colorful graphics to help children understand why their responses are right or wrong. Matching games help children prepare to learn how to read. This program has a picture menu which enables children to select a game. There are commands which can allow the child to jump over the easy part, select the playing speed and select the difficulty level.

ESTIMATED STUDENT TIME REQUIRED: 10-15 minutes biweekly

POTENTIAL USES: The package could be used on an individual basis or in small groups. Adult supervision is recommended.

MAJOR STRENGTHS: Reviewers liked the choices offered in the program. Varying levels of activities and concepts allow the student to move ahead at an individual pace. Teachers were able to adjust the level and speed of the program. Effective use of color and graphics enhanced the software.

MAJOR WEAKNESSES: Vague directions will require adult assistance for the program. The sound can not be turned off, which may be distracting at times. The error sound may be reinforcing to some students.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
			●		Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 2, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Early Games: Music

VERSION: Apple II, Copyright 1983

PRODUCER:
Springboard Software, Inc.
7807 Creekridge Circle
Minneapolis, MN 55435

EVALUATION COMPLETED: June 1984 by the staff and constituents of North Clackamas School District, Milwaukie, Oregon.

COST: $29.95

ABILITY LEVEL: Preschool through grade 6
SUBJECT: Music
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, disk drive, color monitor. Also available for IBM-PC, Commodore 64 (disk or cassette), and Atari (disk or cassette).
REQUIRED SOFTWARE: Apple — Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, game

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — Suggested grade/ability level(s), instructional objectives, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To introduce children to the piano keyboard and certain aspects of music notation.

INSTRUCTIONAL PREREQUISITES: (INFERRED) To be able to read simple questions and enter responses.

CONTENT AND STRUCTURE: These four games help children to discover how to make music. They can create new tunes using the computer to record the music and play it back. They can learn to perform favorites with the Melody Tutor. Guido's Quiz teaches them the names of the notes and the keys on the piano. They can even combine colorful graphics with the sounds. This program also has a picture menu which enables children ages 4 to 12 to select a game.

MAJOR STRENGTHS: It is novel and therefore kind of fun to create music on the computer.

MAJOR WEAKNESSES: Prerequisite skills are needed. Students must be familiar with written notation. Reviewers also found that the program does not allow users to play flat or sharp keys.

OTHER COMMENTS: Reviewers questioned the carry-over from computer keyboard to piano keyboard.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Early Games: Piece of Cake

VERSION: Copyright 1983

PRODUCER: Springboard Software, Inc.
7807 Creekridge Circle
Minneapolis, MN 55435

EVALUATION COMPLETED: June 1984 by the staff and constituents of North Clackamas School District, Milwaukie, Oregon.

COST: $29.95

ABILITY LEVEL: Grades 1 through 9
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, disk drive, color monitor. Also available for IBM-PC, Atari, and Commodore 64 (disk or cassette)
REQUIRED SOFTWARE: Apple — Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Drill and practice, game.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To help children develop both understanding and skill in the basic math concepts.

INSTRUCTIONAL PREREQUISITES: (INFERRED) An introduction to the basic math facts.

CONTENT AND STRUCTURE: This package consists of five games. The Bakery, Multicake and Dividacake are instructional games that use color, sound and animation to reinforce conceptual understanding. Each problem is presented up to four times with increasing degrees and different kinds of help. The correct answer is always given, and the method for getting it clearly shown. Flashcards tests recall of math facts in each of the four basic math functions at different levels of difficulty. It allows three tries for each problem before giving the correct answer. Catchacake is a speed recall game for one to four players. Any of the four math functions can be chosen for each round of five problems. A feature of this program is the picture menu which enables children to select a game.

MAJOR STRENGTHS: The reinforcement system using "ranks" was viewed as a strength of the package. Reviewers liked the Flashcards program which allows you to choose the type of problems and from 5 levels of difficulty.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would not use or recommend use of this package (except for Flashcards and Catchacake if some modifications were made).

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Early Games Piece of Cake, continued

MAJOR WEAKNESSES: In Bakery, the sound effects can become distracting. The program does not put up the whole math sentence until the end, and the repetitions have no variations. In Multicakes and Divideacake the presentation of story problems is poor, including several grammatical errors. The demonstrations on instructional sections are too fast and disappear before the teacher can use them to explain the concept. The Flashcards program does not deal with math facts as stated in the introductory pamphlet. Answers must be put in from left to right which is contrary to the way students are taught to work math problems.

OTHER COMMENTS: The programs do not show how to get correct answer. In Catchacake, mistakes are encouraged through the use of sound and graphics when the cake "splats" on the ground.

Electric English Lessons

PRODUCER: TIES
1925 West County Road B-2
St. Paul, MN 55113

EVALUATION COMPLETED: June 1984 by the staff and constituents of Oregon Total Information System (OTIS), Eugene, Oregon.

COST: Lessons: $70.00
Authoring: $80.00

ABILITY LEVEL: Grades 7 through 9
SUBJECT: Language Arts
TOPIC: Grammar, Vocabulary
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, or IIe, disk drive, monitor, printer (optional and helpful)
REQUIRED SOFTWARE: Applesoft, DOS 3.3, Autostart
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment, assessment
INSTRUCTIONAL TECHNIQUES: Instructional management, authoring, drill and practice

DOCUMENTATION AVAILABLE: In program — teacher's information, resource/reference information, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, teacher's information, textbook correlation.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide English grammar drill and practice exercises in paragraph context. To provide an authoring system which allows teachers to develop their own lessons. To provide a management system to monitor student programs.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need to be familiar with the content to be covered in a particular drill.

CONTENT AND STRUCTURE: The package consists of five program disks: teacher utility, two prepared student lesson disks and two student disks for teacher authored lessons (one for identifying single words in paragraph context, the other for multi-word identification). Students are asked to mark a specific grammatical element in a series of passages. The student disks interface with the teacher utility disk to monitor student progress. Each disc can accommodate records for up to 300 lessons. Records can be deleted singley or in groups. Also, the teacher can alter the menu for individual students.

ESTIMATED STUDENT TIME REQUIRED: 2 hours minimum per prepared lesson disk. This may be longer for students with slower reading rates.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
			●		Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 2.

Electric English Lessons, continued

POTENTIAL USES: The lessons are designed for individual use with no provisions made for group activity. Individual students could use the material as an end activity to a unit of study or as an examination of skills. The program might be useful as a home tutorial for students with access to required hardware.

MAJOR STRENGTHS: The prepared student lessons are well-developed. Disk instructions are complete. The Phrases, Clauses and Sentences exercises are generally better than the Parts of Speech exercises. Teachers can develop their own exercises within a clear set of operations. The student exercises are generally appropriate. Correct answers are identified, then incorrect answers are analyzed. Each exercise allows students a second chance to respond before final scoring. The procedure for entering text for original exercises is well engineered. The package includes forms to facilitate the generation of new exercises. The feature of recording the date the exercise is performed is useful.

MAJOR WEAKNESSES: Time is a major weakness of this program. For example, in the operation of the program starting the teacher writing, management, and printing operations takes so long that an inexperienced or impatient user could misinterpret the delay as program damage. The program listing students who have done an exercise searches the full set of Alpha categories rather than actual users. There is a long delay between lines when outputing data to the printer. There is no option for using two disk drives which necessitates inserting and removing disks several times within an operation. The program is also slow moving the marker to the end of a passage or waiting for the next instruction. A great amount of time is also needed to design and construct lessons. Considering the time necessary to use this program, students could master the material faster if it was presented in print form. Another weakness is that the difficulty of subsequent questions following correct or incorrect responses can not be altered. Finally, the text selections for the Nouns and Direct Object lessons (Parts of Speech) require a level of abstraction and sophistication in language awareness beyond the level of most high school students. They are more appropriate for students in 12th grade and above.

OTHER COMMENTS: The teacher utility disk is not write protected but should be, given its usage. The manual contains two errors: a) on page T-41 a right arrow symbol is missing from paragraph 3, b) on page T-52 the Apple Dot Matrix Printer does not respond as the manual indicates. A grammatical error was noted — "All" described as an adverb in the phrase ". . . with all my force." It is best described as an adjective, though it could be described as a pronoun if one argued that it is an ellipsis and that the phrase would read "with all of my force."

The producer indicated that an enhanced version will be available (late 1984) that will eliminate most of the disk swapping, print management reports faster, and enable faster disk accesses.

micro SIFT COURSEWARE EVALUATION

Floppy Teaches What Is Missing

VERSION: Apple II

PRODUCER: Floppy Enterprises
716 E. Fillmore Avenue
Eau Claire, WI 54701

EVALUATION COMPLETED: May 1984 by the staff and constituents of PREPS, Mississippi State, Mississippi.

COST: $29.95

ABILITY LEVEL: Preschool through grade 6
SUBJECT: Reading, Mathematics, Science
TOPIC: School Readiness
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II Family, disk drive, monitor. Also available for TI 99/4A
REQUIRED SOFTWARE: Apple — Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Game, simulation

DOCUMENTATION AVAILABLE: In program — instructional objectives, program operating instructions, student's instructions. In supplementary materials — instructional objectives, sample program output, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To teach the young child perceptual skills.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Basic word and symbol recognition.

CONTENT AND STRUCTURE: The child will develop the visual skills to determine correct placement of missing parts of a drawing. Reinforcement is given by the Floppy symbol. A tune is also played when the child has a score of 80% or higher.

ESTIMATED STUDENT TIME REQUIRED: 10-20 minutes per day until mastery is reached (could be one day or 3 weeks depending on student).

POTENTIAL USES: The package would be good for all kindergarten and most first graders, as well as remedial or special education students.

MAJOR STRENGTHS: Students actually see where the missing part should be. The feedback is immediate, and the graphics are good.

MAJOR WEAKNESSES: The stereotypical white, male child is used as stimulus.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
●					Content has educational value.
		●			Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.
				●	Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Creating Your Own Greeting Cards

VERSION: Apple

PRODUCER:
Computer Skill Builders
3130 N. Dodge Boulevard
P.O. Box 42050, Dept. 30
Tucson, AZ 85733

EVALUATION COMPLETED: May 1984 by the staff and constituents of PREPS, Mississippi State, Mississippi.

COST: $39.95

ABILITY LEVEL: Grade 3 through postsecondary
SUBJECT: Language Arts, Art
TOPIC: Writing, Typing, Communication Skills
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, disk drive, printer. Also available for IBM-PC.
REQUIRED SOFTWARE: Apple — Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Enrichment
INSTRUCTIONAL TECHNIQUES: Simulation

DOCUMENTATION AVAILABLE: In program — suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, program operating instructions, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To design words and drawings to create greeting cards.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Third grade reading level.

CONTENT AND STRUCTURE: The package consists of 1 diskette and a 16 page manual. This program allows the student to write a narrative for a greeting card from a choice of 10 topics. The student can then design a graphic by moving the cursor which complements the verse. Printouts can be made if desired.

ESTIMATED STUDENT TIME REQUIRED: Approximately 10 minutes per card if you choose from one of the ten choices. If you choose to create your own card it could take hours.

POTENTIAL USES: The package may be used in teaching about holidays or for art or creative writing lessons for all levels above grade 2. It could also be used for some gifted first and second graders. The package would also be a good free time/reward activity. There are limitless possibilities for design by students.

MAJOR STRENGTHS: The package allows students to contribute their own ideas as well as structure the entire card if so desired.

MAJOR WEAKNESSES: The user cannot see the card on the screen before it is printed.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.
●					Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Introductory Algebra

VERSION: Copyright 1983, Apple

PRODUCER: Avant-Garde Creations
P.O. Box 30160
Eugene, OR 97403

EVALUATION COMPLETED: July 1984 by the staff and constituents of Florida Department of Education, Tallahassee, Florida.

COST: $29.95

ABILITY LEVEL: Grades 8 through 10
SUBJECT: Mathematics
TOPIC: Algebra
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II Plus, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3 only
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice

DOCUMENTATION AVAILABLE: In program — Instructional objectives, program operating instructions, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To give the students practice in the following areas: distributive law and like terms, equations with brackets, substitution, binomials, trinomials, and multiplication and division of terms.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The student should be able to perform the four binary operations (addition, subtraction, multiplication, and division) on the set of Natural Numbers. The students should be introduced to each of the concepts prior to using the program.

CONTENT AND STRUCTURE: This program features exercises on the Distributive Law, equations with brackets, substitution, binomials, trinomials and much more. Operating in question-completion format, an equation is displayed on the monitor to which the student is asked to give the correct answer. Features include an updated record of the current and highest score, as well as a constantly displayed menu from which various selections can be made. Lessons are timed so that students can compete with themselves, with others or against the clock. Three levels of difficulty are included in the program.

ESTIMATED STUDENT TIME REQUIRED: 20-30 minutes weekly

POTENTIAL USES: The package could be used as a supplement to classroom instruction. The program could be effectively used individually or in small groups.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
		●			Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
			●		User support materials are comprehensive.
			●		User support materials are effective.
		●			Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
			●		Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 2.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Introductory Algebra, continued

MAJOR STRENGTHS: Reviewers liked the large selection of activities and difficulty levels available throughout the program. The operation rules can be reviewed by the students before starting the activities, which makes the success level higher. It is very easy to move through the program.

MAJOR WEAKNESSES: The documentation is poor. The instructions are not clear and would be confusing to many. The program should have optional sound effects as they can be distracting in some settings. It is possible for students to key an inappropriate response with the use of the control key.

COMMENTS: The producer is currently modifying this package as a result of this review. The new product will be available the fourth quarter of 1984.

microSIFT COURSEWARE EVALUATION

Key Lingo

VERSION: Apple

PRODUCER: Reader's Digest Services, Inc.
Educational Division
Pleasantville, New York 10570

EVALUATION COMPLETED: January 1984 by the staff and constituents of Multnomah ESD, Portland, Oregon.

COST: $29.95

ABILITY LEVEL: Grade 7 through postsecondary
SUBJECT: Language Arts
TOPIC: Vocabulary
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, Family, single disk drive, monitor (color recommended).
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Game, content control

DOCUMENTATION AVAILABLE: In program — prerequisite skills or activities, program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To develop the user's vocabulary.

CONTENT AND STRUCTURE: Key Lingo is an adventure type game designed to develop vocabulary. The package includes a built-in dictionary of more than 250 words organized by level of difficulty. The package also allows the user to enter new words or alter the definition of other words already in the dictionary. Students may choose a warm-up activity to introduce the words and definitions prior to entering the game. Up to four students may play the game and can recap their scores at any time.

ESTIMATED STUDENT TIME REQUIRED: A minimum of 60 minutes is needed to complete the game.

POTENTIAL USES: This program can be used as part of a regular classroom spelling program. It may also be useful as a vocabulary development tool. Although the producer suggests up to four students may play the game at one time, the program moves so slowly reviewers recommended it be used by students individually.

MAJOR STRENGTHS: Reviewers liked the short clear definitions of words, the use of synonyms and the graphics at the beginning of the program Users are offered a choice of playing the game with or without sound. The ability of teachers to enter their own vocabulary words, the warm-up activities, the recap features, and the built-in dictionary were cited as strengths of the program.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
		●			User support materials are comprehensive.
				●	User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Key Lingo, continued

MAJOR WEAKNESSES: The pace is so slow that the motivational success of the program suffers. Although directions given to users were generally good, the program would be more useful if the directions were more explicit.

OTHER COMMENTS: Improvements in speed graphics, and potential dangers encountered by players would enhance the usability of this program. More reinforcement for incorrect answers through use of requiring correct responses would also be an improvement.

micro|SIFT COURSEWARE EVALUATION

Keyboarding for Information (PLATO)

VERSION: Apple II

PRODUCER: Control Data Publishing Company
3111 Sibley Memorial Drive
Eagan, MN 55121
1-800-233-3784 Ext. 142
In MN call collect:
612-921-4494 Ext. 142

EVALUATION COMPLETED: June 1984 by the staff and constituents of Region 10 ESC, Richardson, Texas.

COST: $49.95

ABILITY LEVEL: Grades 3 through postsecondary
SUBJECT: Business Education
TOPIC: Typewriting
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice

DOCUMENTATION AVAILABLE: In program — instructional objectives, teacher's information, student's instructions. In supplementary materials — instructional objectives, sample program output, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To develop basic touch keyboarding skill in a minimum amount of time.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Entry knowledge of keyboard.

CONTENT AND STRUCTURE: This package contains one disk and a 90 page practice book. The program correlates with a practice book to assist the student to develop keyboard speed and accuracy by practicing alphabet, numbers and symbols. Progress checks are available if the student wishes.

ESTIMATED STUDENT TIME REQUIRED: Ongoing. Since this is a skill, progress is individualized.

POTENTIAL USES: Since many programs require knowledge of the keyboard, this program should enhance a user's success with future computer use.

MAJOR STRENGTHS: The package provides drill and practice in a game format. It is fun!

MAJOR WEAKNESSES: The package should provide the capability to time the review section and let you know how many words are typed per minute.

OTHER COMMENTS: The package is good for all ages.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
				●	Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
				●	Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

Logic and Euclidean Geometry

VERSION: Copyright 1983, Apple

PRODUCER: Avant-Garde Creations
P.O. Box 30160
Eugene, OR 97403

EVALUATION COMPLETED: July 1984 by the staff and constituents of Florida Department of Education, Tallahassee, Florida.

COST: $29.95

ABILITY LEVEL: Grades 9 through 12
SUBJECT: Mathematics
TOPIC: Logic, Geometry
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II Plus, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.2 or 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial

DOCUMENTATION AVAILABLE: In program — Instructional objectives, program operating instructions, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To teach geometry structure with 9 basic proof patterns plus congruency.

INSTRUCTIONAL PREREQUISITES: (INFERRED) To have a basic understanding and working feeling for simple geometry concepts.

CONTENT AND STRUCTURE: In this math program, a modern adaptation known as Synthetic Geometry is presented. Logic and Euclidean Geometry teaches geometric structure with nine basic proof patterns plus congruency. Exercises are presented in angle logic, picture/symbol logic, or both at random. The disk also includes a brief history of Euclidean Geometry.

ESTIMATED STUDENT TIME REQUIRED: 30-40 minutes weekly

POTENTIAL USES: The program could be used to strengthen the skills taught in the classroom. It could be effectively used on an individual basis or as a competition between small groups.

MAJOR STRENGTHS: The program is easy to use. The graphics and the tutorial are both well done and effective. The variety of levels and activities help keep the students interested.

MAJOR WEAKNESSES: The documentation is poor and inadequate. The program text is difficult to read.

COMMENTS: The producer is currently modifying this product as a result of this review. The new product will be available the fourth quarter of 1984.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
		●			Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
			●		User support materials are comprehensive.
			●		User support materials are effective.
		●			Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Logic Gates

VERSION: Copyright April, 1983

PRODUCER: TIES
1925 West County Road B2
St. Paul, MN. 55113

EVALUATION COMPLETED: June 1984 by the staff and constituents of PREPS, Mississippi State, Mississippi.

COST: $40.00

ABILITY LEVEL: Grades 10 through 12
SUBJECT: Problem Solving, Logic, Electronics
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, single disk drive, monitor, printer (optional)
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Tutorial, simulation, problem solving

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To become skilled in using logic gates in many combinations; for use in teaching logical thinking.

INSTRUCTIONAL PREREQUISITES: (STATED) Previous experience in electronics but not necessarily experience with all the gates.

CONTENT AND STRUCTURE: Logic Gates is a problem solving activity in which students choose lessons from beginning to more advanced schematics. Lessons have questions on a series of gates. When a voltage is high (+) a light emitting diode (LED) lights up. More advanced lessons include switches and multiple gates. Final lessons feature the schematics commonly used for digital addition and subtraction. At the end of the program the results are stated in the number of correct answers and in percentages. A management system provides the teacher with the student's name, the gates examined, questions correct, and the percentage value.

POTENTIAL USES: This package should be used as a review of logic gates or as an evaluation of a student's ability to work with logic gates. This package would require an introduction/assistance for students — i.e., they cannot start work with it independently.

MAJOR STRENGTHS: The package is generally well written. The manual, graphics, and supplementary activities meld well.

MAJOR WEAKNESSES: The tutorial on the disk is not comprehensive enough for most students.

OTHER COMMENTS: Possible inclusion of a more detailed tutorial lesson would help (step by step).

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
				●	Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Computer Literacy Adventures of the Lollipop Dragon

PRODUCER: SVE, Inc.
1345 Diversey Parkway
Chicago, Illinois 60614

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois

COST: $359.00

ABILITY LEVEL: Preschool through grade 3
SUBJECT: Computer Literacy
TOPIC: Programming
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II Family, disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Tutorial, game

DOCUMENTATION AVAILABLE: In program — sample program output, program operating instructions, teacher's information, student's instructions, follow-up activities. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, pre-test, post-test, teacher's information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To familiarize students with the computer keyboard and introduce programming.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need to have a beginning reading level.

CONTENT AND STRUCTURE: Students learn the keyboard using numbers and letters in both tutorial and games format. Each of four disks feature tutorials followed by games. Disks 3 and 4 offer the student an opportunity to become familiar with the cursor, parts of the screen and beginning programming.

ESTIMATED STUDENT TIME REQUIRED: 4-6 weeks, if used as a unit of study.

POTENTIAL USES: It is suggested that this package be used as a beginning literacy unit for third or fourth grade students.

MAJOR STRENGTHS: Reviewers praised the worksheets for use as pre- and post-tests.

MAJOR WEAKNESSES: The program requires reading skills above the level of most kindergarten, first and second graders. Content was also found to be beyond the ability of these students. The instructions were not always clear. Some filmstrip visuals do not match the text. Third graders can handle the content but found Lollipop Dragon too "cute."

OTHER COMMENTS: Reviewers felt the program would appeal only to complete novices. If Lollipop Dragon were removed, reviewers felt the program would then be usable with third graders. The filmstrips would have to be revised before the total package would be usable as intended by the producer.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
			●		Package achieves defined purpose.
		●			Content presentation is clear and logical.
			●		Difficulty level is appropriate to audience.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
		●			Information displays are effective.
			●		Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

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Evaluators indicated that they would not use or recommend use of this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Math 1-2-3 Four-Pack: Counting

VERSION: Commodore 64

PRODUCER: Micro Ed
P.O. Box 444005
Eden Prarie, MN 55344

EVALUATION COMPLETED: July 1984 by the staff and constituents of Florida Department of Education, Tallahassee, Florida.

COST: $34.95

ABILITY LEVEL: Kindergarten through grade 3
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Commodore 64, single disk drive, monitor
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice

DOCUMENTATION AVAILABLE: In program — Teacher's and student's instructions. In supplementary materials — Suggested grade/ability level, instructional objectives

INSTRUCTIONAL OBJECTIVES: (STATED) To introduce young learners to the concept of counting. (Each individual program has objectives written out in the documentation sheet).

INSTRUCTIONAL PREREQUISITES: (INFERRED) To be able to recognize numbers and type them into the computer. The student would have to be able to read simple instructions such as "How many?" or "Press space bar.", or have teacher assistance. Students will need teacher assistance in booting up the program and going over the initial instructions.

CONTENT AND STRUCTURE: This package includes four programs: Count 'Em, What Number Is Missing?, Adding with Objects and Subtracting with Objects. This series of programs introduces the young learner to the concept of counting. Emphasis is placed on visual observation, with each lesson featuring groups of large, colorful objects pictured on the screen. The first program has a beginning level that challenges the user to count any number of objects to 9 and respond with the proper numeral from the keyboard. An advanced level displays as many as 31 objects on the screen. Another lesson stresses a problem-solving technique by displaying a three-number counting sequence with one of the numbers missing. The two remaining programs serve as an introduction to the operations of addition and subtraction. While the sum or difference of two groups can be counted from the objects on the screen, the learner is encouraged to master the accompanying numerals as the basic facts. Because these lessons are intended for the

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
●					Instruction integrates with prior learning.
●					Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Math 1-2-3 Four-Pack, continued

young beginner, color, animation, and sound are features. Animated displays serve as rewards to motivate the player to correct solutions. All programs include summaries of user performance and the time taken to complete the lesson.

ESTIMATED STUDENT TIME REQUIRED: 15 minutes biweekly

POTENTIAL USES: This package could provide practice for the concepts taught in primary classes.

MAJOR STRENGTHS: Effective use of graphics, animation, and color all enhance the program. The sound effects are adjustable. The on-screen directional content is clear and well presented. Each section summarizes the student's progress.

MAJOR WEAKNESSES: The instructions are intended for the teacher or parent. Students using the package for the first time would require assistance. The pace of the objects and animation can not be adjusted.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Mathfish

VERSION: Copyright 1983, Commodore 64

PRODUCER: Dennis Sonius
1050 Trotter Drive
Twin Falls, Idaho 83301

EVALUATION COMPLETED: July 1984 by the staff and constituents of Florida Department of Education, Tallahassee, Florida.

COST: $12.95

ABILITY LEVEL: Grades 2 through 5
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Commodore 64, disk drive, monitor, joystick (optional)
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, game

DOCUMENTATION AVAILABLE: In program — student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To help teach math facts in addition, subtraction and multiplication.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The students need an understanding of the four basic skills.

CONTENT AND STRUCTURE: This package is designed to help teach the basic math facts. Mathfish is a game, the object of which is to move the hook about with the keys or a joystick and snag the correct answer to the problem. Meanwhile, a nasty piranha swims about eating answers. Should the piranha eat your answer, you can only wait until he hops in the boat. You must score higher than the piranha does. Hooking the right answer and then hitting the fire button or the space bar will catch you points. You will have caught your limit when your score reaches 100. This package includes a reference card and one diskette.

ESTIMATED STUDENT TIME REQUIRED: 10-15 minutes

POTENTIAL USES: This is difficult to determine due to lack of monitoring aspects, inconsistencies, and non-specific difficulty level.

MAJOR STRENGTHS: The game has an attractive graphic display in both animation and color. The variable time factor is motivating due to the fact that students must think fast to play the game.

MAJOR WEAKNESSES: The documentation is skimpy and totally inadequate. The user is unable to select the difficulty level. If you want to review the directions you must stop and reload the program. In the game, there are many inconsistencies and confusing factors. It is also possible to play the game and not complete any drill problems at all for long periods of time. The program ends abruptly with no record of the game.

OTHER COMMENTS: The extreme bottom of the screen appears to have some problem, as there are spaces in the water that are of no consequence and distracting.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
		●			Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
			●		Package achieves defined purpose.
			●		Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
			●		Student creativity is effectively stimulated.
			●		Feedback is effectively employed.

SA	A	D	SD	NA	
			●		Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
			●		User support materials are comprehensive.
			●		User support materials are effective.
		●			Information displays are effective.
			●		Users can operate easily and independently.
		●			Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would not use or recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 1.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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microSIFT COURSEWARE EVALUATION

Processing Power Program, Level E

PRODUCER: Instructional/Communications Technology, Inc.
10 Stepar Place
Huntington Station, NY 11746

EVALUATION COMPLETED: June 1984 by the staff and constituents of Oregon Total Information System (OTIS), Eugene, Oregon.

COST: $180.00 for 6 diskettes (one level)

ABILITY LEVEL: Grades 4 through 6
SUBJECT: Language Arts, Special Education
TOPIC: Reading
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Plus, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, instructional management
INSTRUCTIONAL TECHNIQUES: Drill and practice

DOCUMENTATION AVAILABLE: In program — program operating instructions, teacher's information, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, teacher's information, resource/reference information, student worksheets, follow-up activities, bibliography.

INSTRUCTIONAL OBJECTIVES: (STATED) Program is designed to heighten students' ability to recognize vocabulary rapidly, store and retain words in short-term memory more accurately, and realize meaning in less time. To assist both developmental and special education students to read with greater comprehension and fluency. For developmental students the goal is to build silent reading proficiency. The goal for special education students is to develop competency in oral reading as a foundation for more successful silent reading.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Reading levels equivalent to the vocabulary content of program level in use. Reading instruction at an elementary level. The package is designed to supplement beginning and intermediate instruction for elementary student reading at grade levels one to six.

CONTENT AND STRUCTURE: This package consists of five lesson diskettes, each containing three to four reading selections; one management diskette; one set of Spirit Master Comprehension Check Worksheets with answer keys; one Processing Power Student Record form; and one Teacher's Guide. The five diskettes cover six levels of reading selections appropriate for elementary students in grades 1-6 (15-20 lessons for each level), and six levels of reading selections appropriate for secondary/adult students at grade 1-6 reading levels. All of the

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
				●	Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 4, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Processing Power Program, continued

lessons can be transferred to individual lesson disks. There is sufficient room for the maintenance of records for 100 students. Diskette assignments can be silent or oral reading exercises. Student assignments can be changed. Students can practice reading assignments without the record keeping feature. The rate of reading can be set, changed, and monitored.

ESTIMATED STUDENT TIME REQUIRED: Once or twice a week.

POTENTIAL USES: This could be used as a supplement for independent work or for oral reading practice. Students whose goal is to increase rate and/or comprehension would also find it valuable.

MAJOR STRENGTHS: The program can be a useful tool as it encourages independent work, due to its appeal to a wide range of students and its ease of use. The manual control of the rate or presentation is effective for slower students, while the timed presentation is valuable for students needing to increase reading speed. Most of the comprehension questions were appropriate and reasonable for the reading level.

MAJOR WEAKNESSES: Some of the vocabulary was difficult for the students. There is no provision within the program for defining the words. Some students encountered difficulty choosing a comfortable timed rate. Students thought some of the selections were "boring."

OTHER COMMENTS: One reviewer found the manual presentation to be more practical, as timed presentations do not allow for any "stumbling" words. Suggestions: 1) define vocabulary words, 2) offer user an option to change rate after being given a short sample at the chosen rate.

Quizagon

VERSION: Apple 48K Copyright 1983

PRODUCER: Springboard Software, Inc.
7807 Creekridge Circle
Minneapolis, MN 55435

EVALUATION COMPLETED: June 1984 by the staff and constituents of North Clackamas School District, Milwaukie, Oregon.

COST: $39.95

ABILITY LEVEL: Grade 9 through postsecondary
SUBJECT: Science, Geography, Physical Education, The Arts
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple Family, one disk drive, color monitor. Also available for IBM PC, and Commodore 64 (disk).
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — program operating instructions, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide questions to help students explore and expand the limits of knowledge.

INSTRUCTIONAL PREREQUISITES: (INFERRED) To have a general knowledge in science and geography, sports and games, arts and entertainment and potpouri.

CONTENT AND STRUCTURE: This is a trivia game that involves knowledge, strategy and luck. Over 6,000 questions explore and expand the limits of what you know in four categories: Science and Geography, Sports and Games, Arts and Entertainment, and Potpouri.

ESTIMATED STUDENT TIME REQUIRED: The length of a game varies greatly.

POTENTIAL USES: Game.

MAJOR STRENGTHS: The package is fun and motivating. It can be used to stimulate discussions with students.

MAJOR WEAKNESSES: All topics are not really educationally valuable. If only one person works the computer, it is difficult to always press the keys at the appropriate times. Also, if there is only one person in charge, there is really very little interaction with the computer for the majority of the participants. On the other hand, if each individual works the computer, it can be cumbersome. The sound can become annoying after awhile.

OTHER COMMENTS: Some students in the TAG program questioned some of the answers. Basically, it may stimulate discussion and interest to pursue some areas. I would be interested in seeing the software including the curriculum based categories. I also would like to see categories on a lower (basic skills) level to use with learning disabled students. I would like to see an option that allows the teacher to input questions. Also, an option to omit sound would be nice

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
		●			Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
			●		Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
			●		Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

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Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Rails West!

VERSION: Apple, copyright 1984

PRODUCER: Strategic Simulations, Inc.
883 Stierlin Rd., Bldg. A-200
Mountain View, CA 94043-1983

EVALUATION COMPLETED: June 1984 by the staff and constituents of Region 10 ESC, Richardson, Texas.

COST: $39.95

ABILITY LEVEL: Grades 5 through 12
SUBJECT: Social Studies, Business Education
TOPIC: History, Economics
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, or IIe, single disk drive, color monitor. Also available for the Atari 800 series, and Commodore 64.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Game, simulation, problem solving

DOCUMENTATION AVAILABLE: In program — program operating instructions. In supplementary materials — sample program output, program operating instructions, student's instructions, student worksheets.

INSTRUCTIONAL OBJECTIVES: (Inferred) To develop an understanding of business finances. To develop an understanding of the role railroads played during the years from 1870 to 1900.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction on stocks, bonds, securities, and loans.

CONTENT AND STRUCTURE: This package contains one disk, a 16-page users guide, a "Starting Railroads" reference board, and a pad of player score sheets. The program is a simulation game for up to 8 players where the user attempts to gain wealth by buying, building, and/or selling railroads.

ESTIMATED STUDENT TIME REQUIRED: Since games can be saved for future use, the package time is variable.

POTENTIAL USES: It would be useful as reinforcement in a business education class. It displays problem solving in a practical situation involving a historical railroad setting.

MAJOR STRENGTHS: This program involves intricate and detailed uses of business management and ownership strategies. There is an option as to number of players.

MAJOR WEAKNESSES: The documentation is unclear in many areas of game playing. The teacher would need to preview the packge and be proficient in its use before distributing it to students. Terminology used makes it too advanced for elementary and middle school students.

OTHER COMMENTS: This is a high level strategy game.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
●					Student creativity is effectively stimulated.
●					Feedback is effectively employed.

SA	A	D	SD	NA	
●					Learner controls rate and sequence.
●					Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
		●			User support materials are effective.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

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Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

Floppy Teaches Same and Different

VERSION: Apple II

PRODUCER: Floppy Enterprises
716 E. Fillmore Avenue
Eau Claire, WI 54701

EVALUATION COMPLETED: May 1984 by the staff and constituents of PREPS, Mississippi State, Mississippi.

COST: $29.95

ABILITY LEVEL: Preschool through grade 6
SUBJECT: Mathematics, Science, Reading
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II Family, disk drive, monitor. Also available for TI 99/4A.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Game, simulation

DOCUMENTATION AVAILABLE: In program — instructional objectives, program operating instructions, student's instructions. In supplementary materials — instructional objectives, sample program output, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To teach the young student perceptual skills.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Basic word and symbol recognition.

CONTENT AND STRUCTURE: The Floppy symbol is used to direct the child's attention to symbols and letters so he(she) can choose if they are the same or different. Scores can be shown at any time and a tune is the reward for a score of 80% correct or better.

ESTIMATED STUDENT TIME REQUIRED: 10-15 minutes per day. Number of days depends on length of time necessary for students to gain mastery.

POTENTIAL USES: Useful for remedial and special education students as well as kindergarten and first grade classes.

MAJOR STRENGTHS: Colorful graphics are used to present pictures of objects. The use of letter recognition to teach "same" and "different" was also a strength..

MAJOR WEAKNESSES: The answer keys are "W" and "O" — to select objects that are the "same" or "different." Reviewers felt that using "S" and "D" would have more appropriately reinforced the concepts being presented.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
		●			Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

Scholastic Spelling - Levels 3 to 6

VERSION: TI 99/4A

PRODUCER:
Scholastic Inc.
P.O. Box 7501
2931 McCarty Street
Jefferson City, MO 65102

EVALUATION COMPLETED: May 1984 by staff and constituents of Institute for Education Research, Glenn Ellyn, Illinois.

COST: $68.95

ABILITY LEVEL: Grade 3 to 6
SUBJECT: Language Arts
TOPIC: Spelling
MEDIUM OF TRANSFER: ROM Cartridge
REQUIRED HARDWARE: TI 99/4A, speech synthesizer
INSTRUCTIONAL PURPOSE: Standard instruction, remediation
INSTRUCTIONAL TECHNIQUES: Drill and practice, game

DOCUMENTATION AVAILABLE: In program — suggested grade/ability level(s), program operating instructions, student's instructions. In supplementary material – suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, teacher's information, student's instructions, student worksheets, follow-up activities

INSTRUCTIONAL OBJECTIVES: (STATED) To provide drill and practice with the spelling words which research shows students at this level need the most practice.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need keyboard familiarity.

CONTENT AND STRUCTURE: The Scholastic Spelling module contains 36 lessons and three spelling games. Each of the 36 lessons has 16 to 20 spelling words. Every sixth lesson is a review with words from the previous 5 lessons. Students can select any of the 36 lessons and any of the 3 games for a total of 108 activities. Games include Spelling Bee, That Did It, and Space Race. Also included are 30 student workbooks.

ESTIMATED STUDENT TIME REQUIRED: 20-30 minutes per lesson.

POTENTIAL USES: The program is suggested as useful for students who have difficulty with spelling and who need additional practice.

MAJOR STRENGTHS: The graphics are good. Some reviewers liked the music while others felt the music was a weakness of the program. The pre and post activities suggested in the workbook were praised. The variety of presentation methods and games available was appealing.

MAJOR WEAKNESSES: The sound for the voice synthesizer is unclear. Much of the speech is garbled. In the workbook, the directions are not clear and the actual layout is cluttered.

OTHER COMMENTS: The program would be more effective if teacher-generated spelling lists could be entered. A separate teacher's guide, as well as a student workbook, would enhance the usefulness of the material.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content has educational value.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
	●				Student creativity is effectively stimulated.
●					Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Special Products and Algebraic Factors

VERSION: Copyright 1983, Apple

PRODUCER: Avant-Garde Creations
P.O. Box 30160
Eugene, OR 97403

EVALUATION COMPLETED: July 1984 by the staff and constituents of Florida Department of Education, Tallahassee, Florida.

COST: $29.95

ABILITY LEVEL: Grades 9 through 12
SUBJECT: Mathematics
TOPIC: Algebra
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II Plus, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.2 or 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions

INSTRUCTIONAL OBJECTIVES: (STATED) To develop speed, accuracy and skill when working with distributive law, binomials, trinomials and quadrinomials

INSTRUCTIONAL PREREQUISITES: (INFERRED) The students need to have a basic understanding of the distributive law, binomials, trinomials and quadrinomials

CONTENT AND STRUCTURE: Exercises are presented in this program to develop skill, accuracy, and speed working with advanced cases of the Distributive Law, binomials, trinomials, quadrinomials and factors. There are seven different missions to accomplish, with three levels of difficulty. Elapsed time is constantly displayed to give the user a sense of competition. Also displayed is the menu, allowing advancement to a different level at any time. The additional exercises on factors.

ESTIMATED STUDENT TIME REQUIRED: 30-40 minutes weekly

POTENTIAL USES: This activity would be appropriate in small groups or for individuals. Teacher assistance is necessary.

MAJOR STRENGTHS: Students may choose the activity and difficulty level. An explanation of activities is provided in the program. The correct answer is presented with the incorrect response.

MAJOR WEAKNESSES: Reviewers felt the screen displays were ineffective, and the documentation was very poor and inadequate. The reward system was also disappointing. The correct answers are poorly rewarded, while the incorrect answers are given a beep that can not be turned off. If a wrong key is pressed as a response, the program will stop.

COMMENTS: The producer is currently modifying this product as a result of the review. The new product will be available the fourth quarter of 1984.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
		●			Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
			●		Student creativity is effectively stimulated.
		●			Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
			●		User support materials are comprehensive.
			●		User support materials are effective.
		●			Information displays are effective.
			●		Users can operate easily and independently.
			●		Teachers can employ package easily.
			●		Computer capabilities are used appropriately.
			●		Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 2, Technical Characteristics - 1.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro|SIFT COURSEWARE EVALUATION

Speed/Bingo Math

VERSION: Commodore 64

PRODUCER: Commodore Business Machines
Valley Forge Corporate Center
950 Rittenhouse Road
Norristown, PA. 19403

EVALUATION COMPLETED: June 1984 by the staff and constituents of Oregon Total Information System (OTIS), Eugene, Oregon.

COST: $19.95

ABILITY LEVEL: Grades 3 through 9
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: ROM Cartridge
REQUIRED HARDWARE: Commodore 64, two joysticks, monitor
REQUIRED SOFTWARE: ROM cartridge
INSTRUCTIONAL PURPOSE: Remediation, standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice, game, simulation

DOCUMENTATION AVAILABLE: None

INSTRUCTIONAL OBJECTIVES: To give the student practice in basic math skills.

CONTENT AND STRUCTURE: The player(s) can choose between two math games. 1) Speed Math gives a choice of add, subtract, multiply, or divide with a timed score shown. Bingo Math is played by two operators using joysticks.

ESTIMATED STUDENT TIME REQUIRED: 20 minutes daily

POTENTIAL USES: A drill and practice method to improve accuracy and quickness, in four operations (addition, subtraction, multiplication and division).

MAJOR STRENGTHS: A nice feature of the program is that it offers a choice of operations. The screen displays large readable numbers. Problems are presented in two different formats. Feedback on correct/incorrect answers is an immediate display of the correct answer coupled with a low beep for incorrect and a high beep for correct.

MAJOR WEAKNESSES: The lack of documentation limits the usefulness of the program. The speed of the program cannot be varied or controlled by teacher or student. The correct answer is not displayed on the screen for enough time to recognize or evaluate error. The reinforcement for correct responses is

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
		●			Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
				●	Graphics/sound/color are used appropriately.
	●				Use of package is motivational
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
				●	User support materials are comprehensive.
				●	User support materials are effective.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

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Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3.5, Instructional Characteristics - 3, Technical Characteristics - 2.5.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Speed Bingo/Math, continued

inadequate. The program has little appeal as far as graphics. Displays are monochromatic. Some difficulty was noted in accessing menu. In the Bingo Math portion which requires a joystick, coordination is sometimes difficult. Also the fact that the Commodore does not have a numeric keyboard makes it difficult for younger children to rapidly find the correct number at the top of the keyboard.

OTHER COMMENTS: This program is suited for students who are skilled in math facts and typing. Third and fifth grade students found it frustrating except in areas in which they were highly skilled. If the child did not answer in a given length of time, the answer was given and the next problem appeared. The program could not be used with slow children for this reason. Students that need repetition will find Speed/Bingo Math useful as long as the "newness" lasts. This package is a version of an older arcade game modified for education.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Stickybear ABC

VERSION: Apple

PRODUCER: Weekly Reader Family Software
A Division of Xerox Educational
Publications
1250 Fairwood Avenue
P.O. Box 16754
Columbus, Ohio 43216

EVALUATION COMPLETED: July 1984 by staff and constituents of Linn-Benton Education Service District, Albany, Oregon.

COST: $39.95

ABILITY LEVEL: Pre-school through grade 1
SUBJECT: Language Arts
TOPIC: Reading, Letter recognition
MEDIUM OF TRANSFER: 5 1/4" Disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, monitor. Also available on Atari 48K disk systems.
REQUIRED SOFTWARE: DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice

DOCUMENTATION AVAILABLE: In supplementary materials — Suggested grade/ability level(s), instructional objectives, program operating instructions, teacher's information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To develop letter recognition skills and to become familiar with the computer keyboard.

CONTENT AND STRUCTURE: This package includes a hardback storybook entitled "The Strawberry Look Book", an instruction sheet, a poster, stickers, and one disk. Students simply Press Any Letter. Each letter of the alphabet is represented by two completely different, fully animated pictures with sound. For example, pressing the letter B will bring to the screen a bee buzzing around Stickybear. The word BEE also appears on the screen, as well as the letter B. Press B again and the picture changes to a bouncing ball with the letter B and the word BALL appearing on the screen.

ESTIMATED STUDENT TIME REQUIRED: 10-15 minutes a day

POTENTIAL USES: This program is best used with individuals or in a small group setting.

MAJOR STRENGTHS: Excellent graphics, sound and color stimulate high interest for young children. This program is easily run by small children and allows them to progress at their own rate. Due to the nature of the program, there are no keyboard mistakes.

MAJOR WEAKNESSES: One of the program weaknesses is that all of the sight words have capital letters, this can be confusing particularly to primary students who are taught to write letters in lower case. Also some of the animals are a poor choice for their beginning letter due to a mixture of irregular sounds.

OTHER COMMENTS: This program has documentation which includes ways in which to use the program, as well as other ideas for reinforcement.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.
				●	Student creativity is effectively stimulated.
				●	Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
●					Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The Medalists - States

PRODUCER: Hartley Courseware, Inc.
P.O. Box 419
Dimondale, MI 48821

EVALUATION COMPLETED: May 1984 by the staff and constituents of PREPS, Mississippi State, Mississippi.

COST: $39.95

ABILITY LEVEL: Grades 4 through 10
SUBJECT: Social Studies
TOPIC: Geography
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment, remediation
INSTRUCTIONAL TECHNIQUES: Drill and practice, game

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level(s), sample program output, program operating instructions, teacher's information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide a way to study and learn important facts about the states.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The student needs to have learned facts about the states.

CONTENT AND STRUCTURE: This package contains one disk and a 26-page user's guide. It provides a drill and practice game where students can compete against themselves for high score or against others. The difficulty level is set by the student by entering the number of points for completion. Points are awarded according to how well the student can answer questions about certain facts concerning the states. The questions cover such things as; postal abbreviations, bordering states, major industries, capital city, state bird, state flower, largest cities, etc. The package keeps records for up to 50 students. It also provides a means of creating and maintaining your own question file.

ESTIMATED STUDENT TIME REQUIRED: This depends on how students use the package — it could be used repeatedly by students for 15-50 minutes per session.

POTENTIAL USES: The package would be useful as enrichment for students learning about the United States. The target age range is a little wide — it might prove boring for many high school students and difficult for average fourth graders.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The Medalists - States, continued

MAJOR STRENGTHS: This package would provide valuable supplementary information for classroom use in social studies. It would also prove to be a more motivating means for stimulating students to learn basic facts about the states. The ability for the teacher to add their own content items is a plus.

MAJOR WEAKNESSES: Supplementary information on how to use the package effectively at different levels (grade or ability) is not supplied. No reference is made to the kind of strategies students should use to attempt mastery of this material. Students are not told when they have misspelled a word, which could confuse them. The program will crash if control-C is entered.

COMMENTS: Reviewers also felt teachers would have to be careful to provide the appropriate background for their students.

micro SIFT COURSEWARE EVALUATION

The Reef of Gold

PRODUCER: Encyclopedia Britannica
Education Corporation
425 North Michigan Ave.
Chicago, IL 60611

EVALUATION COMPLETED: March, 1983 by the Oakland ISD, Pontiac, Michigan.

COST: Individual Program: $49.00, with noncirculating back-up; $59.00

ABILITY LEVEL: Grades 4 through 5
SUBJECT: Language Arts
TOPIC: Reading
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II Family, single disk drive, monitor, printer (optional)
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, remediation, authoring
INSTRUCTIONAL TECHNIQUES: Tutorial

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, teacher's information, student's instructions, textbook correlation.

INSTRUCTIONAL OBJECTIVES: (STATED) To improve the user's skills in vocabulary, word meaning and reading comprehension.

INSTRUCTIONAL PREREQUISITES: (STATED) The student must have read the story "The Reef of Gold" or have viewed the optional filmstrip.

CONTENT AND STRUCTURE: This package is one of four stories from Neptune's Gold, a reading series that deals with treasure hunting. The package includes 5 reading texts, a teacher's guide and a program disk which leads the student through the entire program. The program contains three levels of difficulty and will automatically adjust the level to meet the students needs. When students have finished the program, a complete record of each student's performance is recorded on the disk. The program also includes a teacher option mode for viewing and maintaining the disk file.

ESTIMATED STUDENT TIME REQUIRED: 20 minutes per level

POTENTIAL USES: The program may be used for drill and practice activities after students have read the story. Students of average or above average ability can benefit from the program. It is not appropriate for remedial students.

MAJOR STRENGTHS: The program addresses a variety of comprehension activities (i.e., vocabulary, meaning, synonyms, literal

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
			●		Student creativity is effectively stimulated.
		●			Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The Reef of Gold continued

comprehension). The purpose is well defined. The program content is logically presented, and the material is adaptable to several different disciplines.

MAJOR WEAKNESSES: The opening lesson is designed to provide students with definitions for words in the accompanying text. Unfortunately, the definitions are often unclear and as hard or harder to understand than the words they are supposed to define. Another section, on comprehension, asks the reader to fill in blanks in a sentence from a list of words. Some of these words are from the text, and others are synonyms for some of the correct words. The student is to produce verbatim the text as it appeared in the accompanying story. The comprehension section asks true and false questions about minute details in the text. This activity is labeled by the authors as a comprehension lesson. The same word is given at each level for the final "fun" exercise. Support materials describe only elements of the program—no ideas for classroom implementation are given. The program's pace is also slow. Student errors are not corrected. Reviewers felt it was overrated as to grade level.

micro SIFT COURSEWARE EVALUATION

U.S. Constitution Tutor

VERSION: Apple

PRODUCER: Micro Learn a Division of
MicroLab, Inc.
2699 Skokie Valley Road
Highland Park, IL 60035

EVALUATION COMPLETED: June 1984 by the staff and constituents of Region 10 ESC, Houston, Texas

COST: $35.00

ABILITY LEVEL: Grades 7 through postsecondary
SUBJECT: Social Studies
TOPIC: American Government
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, single disk drive, monitor. Also available for Commodore 64, IBM-PC/PC jr.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment, assessment
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, program operating instructions, teacher's information, resource/reference information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide content on U.S. government and the U.S. Constitution so that students will understand the concepts and procedures of American government and thereby improve citizenship. To provide content on U.S. government and the U.S. Constitution to prepare students for required tests. To provide practice in taking multiple-choice tests under non-stressful conditions. To improve thinking skills: classification of ideas, analysis, synthesis, making generalizations, drawing inferences, etc.

INSTRUCTIONAL PREREQUISITES: (STATED) Prior knowledge of concepts in American government and the U.S. Constitution.

CONTENT AND STRUCTURE: This package consists of multiple-choice questions which are arranged both by subject and by level of difficulty. If studied by subject (Legislative, Executive, Elections, etc.) users will find the questions arranged within each menu topic. The easier questions will come first, and the experience is like a lesson. If studied by difficulty level (Beginner, Intermediate,

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
				●	Student creativity is effectively stimulated.
●					Feedback is effectively employed.

SA	A	D	SD	NA	
●					Learner controls rate and sequence.
●					Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
●					Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4.5, Technical Characteristics - 4.5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

U.S. Constitution Tutor, continued

Advanced) the subject matter will be more "mixed up," but the experience will be like a test. Topics included are Legislative Branch, How a Bill Becomes a Law, Executive Branch, Elections, Judicial Branch, Amendments, Constitutional Principals, and Rights.

ESTIMATED STUDENT TIME REQUIRED: 4 to 5 hours.

POTENTIAL USES: This package provides relevant information which could be used as review or reinforcement pertaining to the Constitution and Legislative Branches. The package could be used with individuals, small groups, or in large group situations. It could be used as a tool for discussion.

MAJOR STRENGTHS: All the material is very well organized and planned. The concepts are presented clearly and with varying levels of difficulty. The feedback is immediate and appropriate.

MAJOR WEAKNESSES: The delay while the computer retrieves the next question is too long.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Vectors and Graphing, Volume 1

VERSION: Copyright 1981

PRODUCER: Cross Educational Software
1802 N. Trenton Street
P.O. Box 1536
Ruston, Louisiana 71270

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $15.00

ABILITY LEVEL: Grade 11 through postsecondary
SUBJECT: Sciences
TOPIC: Physics, Mathematics
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Plus, IIe, & IIc, one disk drive, monitor. Will be avilable for IBM-PC.
REQUIRED SOFTWARE: Applesoft, DOS 3.3 (may be converted to 3.2)
INSTRUCTIONAL PURPOSE: Remediation, standard instruction
INSTRUCTIONAL TECHNIQUES: Tutorial, problem solving
SCIENCE PROCESSES INVOLVED: Organizing information, interpreting information.

DOCUMENTATION AVAILABLE: In program — prerequisite skills/activities, program operating instructions, student's instructions. In supplementary materials — program operating instructions, post-test, teacher's information.

INSTRUCTIONAL OBJECTIVES: To introduce the concepts of vector resolution, vector addition, DOT products and cross products.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The student must have received prior instruction on the concepts covered by the package; trigonometry is required.

CONTENT AND STRUCTURE: The package is the first of a 12 volume Physics Series. Each volume of the series is sold separately. The package consists of 1 diskette and a manual. The manual contains a brief description of each program, some brief teacher notes, and a listing of the "Datagraph" program. The seven programs in the package are: Vector Resolution, DOT Products, Vector Products with Unit Vectors, Vectors and Scalars Quiz, Vector Addition, Cross Products, and Graphing Data.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
			●		Feedback is effectively employed.
			●		Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
●					Learning can be generalized.
			●		User support materials are comprehensive.
			●		User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be unreasonable compared to its instructional value.

Evaluators indicated that they would not use or recommend use of this package.

Summary: (1 = Low, 5 = High)
Content - 2, Instructional Characteristics - 2, Technical Characteristics - 1.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

POTENTIAL USES: The package is useful for students who have had trigonometry to review vectors and graphing.

ESTIMATED STUDENT TIME REQUIRED: 20-30 minutes per segment.

MAJOR STRENGTHS: The package is easy to use for students with no prior computer experience.

MAJOR WEAKNESSES: The package assumes trigonometry, vectors and graphing experience. Most students at this level probably wouldn't benefit from this type of experience. It is definitely not drill and practice and only marginally tutorial. It is possible to go through each section without displaying any learning. This package makes poor use of computer capabilities.

MicroSIFT Courseware Evaluations

Set 12 (260-293)

Algebra Arcade

VERSION: Apple II+, IIe

PRODUCER: Wadsworth Electronic
Publishing Company
555 Abrego
Monterey, CA 93940

EVALUATION COMPLETED: July 1984 by the staff and constituents of The Northwest Regional Educational Laboratory in Portland, Oregon and Oakland Schools in Pontiac, Michigan.

COST: $49.95

ABILITY LEVEL: Grades 7 through post-secondary.
SUBJECT: Mathematics
TOPIC: Algebra
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II+ or Apple IIe, 1 disk drive, monitor (color prefered), Joystick optional.
REQUIRED SOFTWARE: 5-1/4 in. floppy disk
INSTRUCTIONAL PURPOSE: Enrichment.
INSTRUCTIONAL TECHNIQUES: Tutorial, drill and practice, game.

DOCUMENTATION AVAILABLE: In program — suggested grade/ability level(s). In supplementary material — program operating instructions, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide students with instruction and practice in creating graphs of equations on a coordinate plane.

INSTRUCTIONAL PREREQUISITES: (INFERRED) A knowledge of first year algebra, linear and quadratic equations.

CONTENT AND STRUCTURE: Algebra Arcade is designed for one or two players to develop skills in defining functions whose graph will eliminate "Algebroids" using a "Whirlwind" symbol. The game format rewards the highest score to the player whose equation(s) remove the most obstacles in the shortest time. Several variations add interest and motivation to appeal to a wide range of skill levels.

ESTIMATED STUDENT TIME REQUIRED: One to two class periods.

POTENTIAL USES: This package could be used with individuals or pairs as a reinforcement and motivational tool in any class studying families of equations and their graphs (Introduction to Algebra through Pre-calculus). Other possible uses include enrichment activities for advanced students and large group demonstrations.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) or 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Algebra Arcade, continued

MAJOR STRENGTHS: The program is fun and motivational. It encourages the user to develop his/her ability in working with graphs of equations. The students want to learn more advanced functions to get better at the game. The program accomodates various math abilities ranging from the beginner using equations such as y=2 to the more advanced math student using equations such as y=3*sin(x-1.7). A program control feature allows the user to modify the programs speed, type of equations, sound, size of coordinate plane, and others. The documentation is comprehensive and understandable.

MAJOR WEAKNESSES: The user must be familiar with the material in the 26 page user's guide to be able to take advantage of all of the features the program has to offer. All equations must be in the form y=f(x). Equations in the for x=f(y) cannot be entered although are sometimes very useful for playing the game. Equations must be entered using the symbolism of BASIC rather than the symbolism of algebra. For example, the equation y=2x+4 must be entered as Y=2*X+4.

OTHER COMMENTS: I'm sure my students would love this program!

Alligator Alley

VERSION: Apple

PRODUCER: DLM, Inc.
One DLM Park
PO Box 4000
Allen, TX 75002

EVALUATION COMPLETED: July 1984 by the staff and constituents of OTIS in Eugene, Oregon.

COST: $44.00

ABILITY LEVEL: Varies
SUBJECT: Miscellaneous
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II, IIe, 1 disk drive, color monitor (preferred), printer (optional), joystick (optional).
REQUIRED SOFTWARE: DOS 3.3 Applesoft.
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Content control, drill and practice, game.

DOCUMENTATION AVAILABLE: In supplementary material — program operating instructions, teacher's information, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) Teacher must establish aims for individual students and provide content to meet those aims.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Given teacher produced content, prerequisites will vary. Students will need experience using keyboard and operating the computer.

CONTENT AND STRUCTURE: This package includes a Manual, one diskette, and a set of Blackline Masters. The program is designed around a microcomputer program in game format to which teachers add specific content. The games provide drill and practice activities. The game may be played using the keyboard or joystick. The game (speed, playing time, sound, etc.) can be altered. In addition, game titles and lists can be printed. The worksheets are for timed practice, recordkeeping, and quick reference to commands and keystrokes.

ESTIMATED STUDENT TIME REQUIRED: Fifteen minutes per day, 3-4 days per week. Due to flexibility of content, there are many variables which would effect the length of time needed to achieve objectives.

POTENTIAL USES: This package could replace many drill sheets prepared by classroom teachers. Student progress could be monitored and charted. The program lends itself better to drill and practice of math facts more so than other areas of the curriculum.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
				●	Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Alligator Alley, continued

MAJOR STRENGTHS: Students were motivated by graphics and the building of one alligator on top of another to prove success. The immediate feedback is rewarding and the lack of success is not as devastating as is sometimes the case with pencil and paper or flashcard drills. The program is also strengthened by the ability to control options such as speed and running time. The manual is clear and easy to read.

MAJOR WEAKNESSES: While the program is motivating, some variety of action is needed. The directions, while running the program, are not clear for first-time users to start up.

OTHER COMMENTS: This program varies from the typical shoot-em-up, blow-em-up arcade formats previously seen. Also only one keystroke is needed to respond to the problem on the screen.

Beginning Composition

VERSION: 1982 Apple

PRODUCER: Behavioral Engineering
230 Mt. Hermon Road #207
Scotts Valley, CA 95066

EVALUATION COMPLETED: August 1984 by the staff and constituents of Region IV Educational Service Center in Houston, Texas.

COST: $34.95

ABILITY LEVEL: Grades 9 through post-secondary
SUBJECT: Language Arts
TOPIC: Writing
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II, IIe, 48K, 1 disk drive, monitor, printer (optional)
REQUIRED SOFTWARE: DOS 3.3, Applesoft
INSTRUCTIONAL PURPOSE: Enrichment
INSTRUCTIONAL TECHNIQUES: Tutorial, word processing

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary material — instructional objectives, sample program output, program operating instructions, teacher's information, resource reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To assist the user in getting around writing blocks. To facilitate writing and composing.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Keyboarding skills and junior high school level composition skills.

CONTENT AND STRUCTURE: This package contains one disk and a 31 page Users Guide. It uses eye movement leads and linguistic prompts to draw out ideas and teach about composition and creative writing. It includes a tutorial and editing section. It offers suggestions for making writing more exciting and directing it to a particular audience.

ESTIMATED STUDENT TIME REQUIRED: Varies

POTENTIAL USES: This package would be appropriate only for an advanced composition class where the students were self-motivated.

MAJOR STRENGTHS:

1) The program presents a novel and interesting approach to overcoming writer's block. Research in Neuro-Linguistic Programming shows that eye movements are related to the thinking process. The program guides eye movement while encouraging the user to examine how he/she visualizes, hears, or feels about the topics, the audience, and the intended audience response.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
				●	Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
			●		Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
		●			Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would not use or recommend this package. (Note reasons under weaknesses.)

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Beginning Composition, continued

2) The use of connective word prompts is helpful. Because the "connectives" are movable and selectable the writer can play with word order and choice. This opens possible new options and directions at each sentence in the writer's composition.

MAJOR WEAKNESSES:

1) Success with the program is determined by the writer's satisfaction with his/her composition. In addition, it is difficult to gauge how much the program helps to make writing easier. For this, the package is limited to highly self-directed, mature students.

2) The initial mental exercises, designed to prepare the writer for writing on the chosen topic, are too brief and insufficiently developed. The exercises lack enough direction to really give the user complete mental images.

3) While the connective prompts lead to new options for the writer, the strategy is repetitive and limited. The same small set of prompts are used in the same way throughout the program. This makes regular use less likely to aid creativity.

4) The program operation fails and sends the user back to the main menu with certain keystroke sequences.

OTHER COMMENTS: An advanced version, "Composition Strategy" is available from the same producer. The advanced version is very similar but it includes a greater variety of prompts.

Budgeting Simulation

VERSION: Apple

PRODUCER:
EMC Publishing
300 York Avenue
St. Paul, MN 55101

EVALUATION COMPLETED: August 1984 by the staff and constituents of TIES, in Roseville, Minnesota.

COST: $55.00

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Mathematics, Personal Finance, Home Economics
TOPIC: Life Skills
MEDIUM OF TRANSFER: 5 1/2 in. disk
REQUIRED HARDWARE: Apple II+ or Apple IIe, single disk drive, monitor
REQUIRED SOFTWARE: DOS 3.3, Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment
INSTRUCTIONAL TECHNIQUES: Simulation and game

DOCUMENTATION AVAILABLE: In Program — student's instructions. In supplementary material - suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, program operating instructions, teacher's information, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To finish one year of the budgeting simulation game living the lifestyle you prefer, while incurring the least penalties.

INSTRUCTIONAL PREREQUISITES: (STATED) It is recommended but not a necessary requirement that students be familiar with basic concepts of home budgeting.

CONTENT AND STRUCTURE: This package contains one disk and a 24 page Users' Guide. The program is a home budgeting simulation game where the user must make budgeting decisions. Program components include instructions, lifestyle choices, monthly rounds, and performance summary sections. To complete the simulation, students must maintain their budget through 12 monthly rounds and cope with unexpected events. A 'save game' feature is also available.

ESTIMATED STUDENT TIME REQUIRED: Varies. About 1 hour to complete one set of 12 monthly rounds.

POTENTIAL USES: This package could be used in current affairs, personal finances, or home economics in connection with a unit on budgeting.

MAJOR STRENGTHS: The simulation provides a good variety of unexpected events.

MAJOR WEAKNESSES: There does not appear to be any apparent benefits to choosing optional opportunities. There is too long a period of time before feedback is given to students. Evaluation could give much more descriptive detail of good and poor.

OTHER COMMENTS: The package would be more appropriate if a teenage budget was also available along with a family budget.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low)
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Budgeting Tutorial

VERSION: Apple

PRODUCER: EMC Publishing
300 York Avenue
St. Paul, MN 55101

EVALUATION COMPLETED: August 1984 by the staff and constituents of TIES in Roseville, Minnesota.

COST: $55.00

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Mathematics, Personal Finance, Home Economics
TOPIC: Life Skills
MEDIUM OF TRANSFER: 5 1/2 in. disk
REQUIRED HARDWARE: 48K Apple II+ or Apple IIe, 1 disk drive, monitor.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment
INSTRUCTIONAL TECHNIQUES: Tutorial

DOCUMENTATION AVAILABLE: In Program — student operating instructions. In supplementary material - suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, program operating instructions, teacher's information.

INSTRUCTIONAL OBJECTIVES: (STATED) This package was designed to teach students what a budget is, why it is important, relevant terminology and concepts, and common budget categories.

INSTRUCTIONAL PREREQUISITES: (STATED) Lower level math skills and elementary reading skills.

CONTENT AND STRUCTURE: Budgeting Tutorial contains one disk and a 16 page Users' Guide. The programs include tutorials which explain what a budget is, why budgeting is important, what income and expenses are, how to set both long and short range goals, fixed and variable expenses, periodic and emergency expenses, and savings. Two case studies describe students with budgeting problems while the third portrays a young married couple.

ESTIMATED STUDENT TIME REQUIRED: About 90 minutes.

POTENTIAL USES: This package could be used as a tutorial in current affairs class for life skills, or budgeting in home economics class.

MAJOR STRENGTHS: The package contains a good variety of types of questions. It provides good branching on incorrect answers.

MAJOR WEAKNESSES: The program 'Blazing Bucks', does not lead the student to anything useful in future exercises. The target should be smaller. The cases could have more student interaction. The text appears on the screen much too slowly. The program allows meaningless input on the income analysis section. The package seems to be geared more toward teens with such things as babysitting income.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

I highly recommend this package.

Summary: Scale 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Charged Particles II

VERSION: Apple

PRODUCER: Vernier Software
2920 SW 89th Street
Portland, OR 97225

EVALUATION COMPLETED: June 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $24.95

ABILITY LEVEL: Grades 9 through post-secondary.
SUBJECT: Sciences
TOPIC: Physics
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Apple II+ or IIe, 48K, one disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Simulation, laboratory tool, problem solving, demonstration.

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, decision making.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — instructional objectives, sample program output, program operating instructions, teacher's information, student's instructions, student worksheets, follow-up activities, program modifications.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide the user with the opportunity to experiment with charged particles moving through magnetic and electric fields.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The student will require prior instruction on the effects of magnetic and electrical fields on the motion of charged particles.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree   A - Agree   D - Disagree   SD - Strongly Disagree   NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3.7, Instructional Characteristics - 2.7, Technical Characteristics - 2.7.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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CONTENT AND STRUCTURE: This package allows students to experiment with the motion of an electrically charged particle in magnetic and electric fields. Several different particles are used, including two "unknown particles." The program presents a menu of 8 challenges to the student. Two examples are:

Determine the mass of an electron by experimenting with how it is affected by a magnetic field.

Determine as much as you can about the isotopes of UNKNOWN Z by using the simulation as a "mass spectrometer."

The student experiments by changing the field strengths or the speed of the particle until the necessary solution is found.

Three utility programs are included on the diskette: Computer Stopwatch, Hex-decimal and Rounder.

The 27 page manual includes student worksheets, solutions and background information on the challenges. It also includes instructions for using the program in the manual mode for demonstrations.

POTENTIAL USES: Potential use of this program is limited without the manual. The teacher would have to monitor and assist the user. Under such assistance the program could provide practice applying principles of charged particle interaction with fields.

ESTIMATED STUDENT TIME REQUIRED: Student time would vary. One estimate is that it would require three class periods after a study of field theory.

MAJOR STRENGTHS: The graphics displayed are a strength. Additionally, the computer is used as an apparatus of lab equipment from which measurements may be taken. There is some program capacity to design own experiments. This package is NOT COPY OR LIST PROTECTED inorder to allow the teacher to modify the package and to make additional copies for student use. Program design notes are included.

MAJOR WEAKNESSES: It is essential that the manual be reviewed carefully prior to use. This program provides students with an opportunity to demonstrate knowledge of charged particle behavior, but the program itself provides no instruction. Students will not find it highly motivating; what they get out of the program will depend upon what they put into it. There is no opportunity for feedback to help the student. The Utility programs are of minimal use.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Circuit Lab

VERSION: Atari

PRODUCER: Atari Program Exchange
1312 Crossman Avenue
Sunnyvale, CA 94088

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon, and the Illinois Vocation Curriculum Center, Springfield, Illinois.

COST: $24.95

ABILITY LEVEL: Grades 9 through post-secondary
SUBJECT: Math/Physics
TOPIC: Electronics
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Atari 800, 810 disk drive, joystick, and monitor
REQUIRED SOFTWARE: BASIC language cartridge
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.

INSTRUCTIONAL TECHNIQUES: Simulation, problem solving.
SCIENCE PROCESSES INVOLVED: Organizing, information, decision making, interpreting information.
SCIENCE CONCEPTS INVOLVED: Cause-effect, model, replication, change, field. validation, equilibrium, interaction, invariance, system.

DOCUMENTATION AVAILABLE: In program — Prerequisite skills or activities, sample program output, student's instructions. In supplementary materials —Suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To learn the fundamentals of D.C. electrical circuits.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need a knowledge of high school algebra.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend use of this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This program allows the student to build electrical circuits on the monitor screen by following a few basic rules of electricity. Using a joystick, the student learns to work with series, parallel or combination series/parallel circuit layouts.

POTENTIAL USES: This program would be good for any course that covers elementary DC circuits (parallel, series, mixed). It could be used for a pre-lab or in place of a lab.

ESTIMATED STUDENT TIME REQUIRED: This program would require 6 to 12 hours for mastery, but may be done in 20 minute segments. It could also be used as a test to see if students set up the circuit after they had studied other material.

MAJOR STRENGTHS: The students receive immediate feedback for their responses and have control over their pacing. The overall simulation is done well. The graphics enhance the program.

MAJOR WEAKNESSES: The package contains few teacher support materials. It would be an asset to have practice materials to do evaluations of the students understanding.

OTHER COMMENTS: It would be helpful to let students wire things incorrectly in the simulation so they could see the results and not make the same mistake in a real lab setting.

micro SIFT COURSEWARE EVALUATION

Composition Strategy

VERSION: 1982 Apple

PRODUCER: Behavioral Engineering
230 Mt. Hermon Rd. #207
Scotts Valley, CA 95066

EVALUATION COMPLETED: August 1984 by the staff and constituents of Region IV Educational Service Center in Houston, Texas.

COST: $39.95

ABILITY LEVEL: Grades 9 through post-secondary
SUBJECT: Language Arts
TOPIC: Writing
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II, IIe, 48K, 1 drive, monitor, printer (optional).
REQUIRED SOFTWARE: DOS 3.3, Applesoft
INSTRUCTIONAL PURPOSE: Enrichment
INSTRUCTIONAL TECHNIQUES: Tutorial, word processing

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — instructional objectives, sample program output, program operating instructions, teacher's information, resource reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To assist the user in getting around writing blocks. To facilitate writing and composing.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Keyboarding skills and junior high school level composition skills.

CONTENT AND STRUCTURE: This package contains one disk and a 36 page Users Guide. It uses eye movement leads and linguistic prompts to draw out ideas and teach people about composition and creative writing. This package is an advanced version of Beginning Composition Strategy, which provides more sophisticated prompts, more control, and more options for creativity.

ESTIMATED STUDENT TIME REQUIRED: Varies

POTENTIAL USES: This program could be used in advanced composition classes with motivated users.

MAJOR STRENGTHS:

1) The program presents a novel and interesting approach to overcoming writer's block. Research in Neuro-Linguistic Programming shows that eye movements are related to the thinking process. The program guides eye movement while

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
				●	Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
			●		Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
		●			Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would not use or recommend this package. (Note reasons under weaknesses.)

Summary: Scale from 5 (High) to 1 (Low)
Content - 3, Instructional Characteristics - 2, Teachnical Characteristics - 2.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Composition Strategy, continued

encouraging the user to examine how he/she visualizes, hears, or feels about the topics, the audience, and the intended audience response.

2) The use of connective word prompts is helpful. Because the "connectives" are movable and selectable the writer can play with word order and choice. This opens possible new options and directions at each sentence in the writer's composition.

MAJOR WEAKNESSES:

1) Success with the program is determined by the writer's satisfaction with his/her composition. In addition, it is difficult to guage how much the program helps to make writing easier. For this, the package is limited to highly self-directed, mature students.

2) The initial mental exercises, designed to prepare the writer for writing on the chosen topic, are too brief and insufficiently developed. The exercises lack enough direction to really give the user complete mental images.

3) The additional prompt options offered in the advanced version do not make writing any easier. The process of cycling through the word options is time consuming and tends to inhibit a train of thought.

OTHER COMMENTS: A beginning version, "Beginning Composition", is available from the same producer. The beginning version is very similar but it has a limited set of prompts.

micro SIFT COURSEWARE EVALUATION

Electronic Blackboard Series: Algebra

VERSION EVALUATED: Apple Version 1.1

PRODUCER: Wadsworth Electronic Publishing Co.
555 Abrego
Monterey, CA 93940

EVALUATION COMPLETED: February 1984 by the staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $95.00
Entire Series of 4 diskettes $165.00

ABILITY LEVEL: Grades 8 through postsecondary
SUBJECT: Mathematics
TOPIC: Algebra
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, one disk drive, and monitor (color recommended)
REQUIRED SOFTWARE: Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Demonstration

DOCUMENTATION AVAILABLE: In supplementary material — suggested grade/ability level(s), sample program output, program operating instructions, resource/reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide a demonstration tool for the teacher to illustrate geometric concepts in algebra.

INSTRUCTIONAL PREREQUISITES: (INFERRED) An appropriate background in mathematics to be able to demonstrate the various functions.

CONTENT AND STRUCTURE: This package is the first of three packages in a series. It contains five disks covering cartesian coordinates, lines and linear functions, quadratics and polynomials, conic sections, and logarithms, exponentials and inequalities.

ESTIMATED STUDENT TIME REQUIRED: Since the package is used by the teacher to demonstrate various concepts in algebra, the time required will vary.

POTENTIAL USES: The package could be used as a demonstration tool in the interactive mode and display mode. Students can use the interactive mode to practice or check their work. The target mode provides students with an opportunity to practice skills.

MAJOR STRENGTHS: Windows were used effectively in the package. The three modes are a nice option. The display mode demonstrates pre-set examples step by step, the interactive mode allows input of your own examples, and the target mode provides practice for the students.

MAJOR WEAKNESSES: The teacher would need to read and study manual thoroughly before being able to use this program. Even after reading the manual it was difficult to operate.

OTHER COMMENTS: More support materials for student/teacher use are needed!

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content has educational value.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
				●	Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
				●	Graphics/sound/color are used appropriately.
				●	Use of package is motivational.
				●	Student creativity is effectively stimulated.
				●	Feedback is effectively employed.

SA	A	D	SD	NA	
				●	Learner controls rate and sequence.
				●	Instruction integrates with prior learning.
				●	Learning can be generalized.
	●				User support materials are comprehensive.
		●			User support materials are effective.
	●				Information displays are effective.
				●	Users can operate easily and independently.
			●		Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - NA, Technical Characteristics - 3.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The Electronic Study Guide - System of Equations and Inequalities

VERSION: Apple

PRODUCER: Wadsworth Electronic
Publishing Company
555 Abrego
Monterey, CA 93940

EVALUATION COMPLETED: July 1984 by the staff and constituents of The Northwest Regional Educational Laboratory in Portland, Oregon and Oakland Schools in Pontiac, Michigan.

COST: $49.95.
Entire six package series $275.00.

ABILITY LEVEL: Grades 8 through 12
SUBJECT: Mathematics
TOPIC: Algebra
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II+ or Apple IIe, 48K, 1 disk drive, monitor (color recommended).
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Tutorial, drill and practice.

DOCUMENTATION AVAILABLE: In program — Instructional objectives, program operating instructions, post-test, student's instructions. In supplementary material — Sample program output, program operating instructions, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide supplemental instruction and drill on systems or equations and inequalities.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction on the concepts covered in this package. The student should have a good understanding of the techniques of solving simple equations and inequalities.

CONTENT AND STRUCTURE: This package is one in a series of six packages designed to supplement an algebra curriculum. Each package contains between 5 and 10 sections detailing various topics and 40 to 60 questions. The problems selected represent varying degrees of difficulty. Each section concludes with a self-checking quiz. Topics covered in this package are: systems of equations, systems of equations with two variables, systems of linear equations with more than two variables, matrix solutions of systems of equations, the algebra of

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
●					Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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The Electronic Study Guide - Systems of Equations and Inequalities, continued

matrics, determinants, properties of determinants, Cramer's rule, systems of inequalities, and linear programming.

ESTIMATED STUDENT TIME REQUIRED: 20 to 30 minutes per concept for each of the ten concepts.

POTENTIAL USES: This package could be used to give individual students supplementary help on systems of equations and inequalities.

MAJOR STRENGTHS: It is very easy for the student to move through the package. The directions and prompts are clear and concise making it possible for the student to use the package without relying heavily on the manual. This feature makes it very easy to assign a student to do a particular concept.

MAJOR WEAKNESSES: When a student misses a problem, they are given instructions as to how the problem could be solved. But, during the instruction, the intermediate steps which are often the most confusing to the student are omitted. The package is not very motivational and the use of graphics and sound are minimal.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Four-Letter Words

VERSION: Apple II, II+

PRODUCER:
Conduit
University of Iowa
Oakdale Campus
Iowa City, Iowa 52242

EVALUATION COMPLETED: June 1984 by the staff and constituents of The Area Cooperative Educational Services in Hamden, Connecticut.

COST: $50.00

ABILITY LEVEL: Grades 8 through post-secondary
SUBJECT: Language Arts
TOPIC: Vocabulary
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II, Family, one disk drive, monitor, printer optional.
REQUIRED SOFTWARE: DOS 3.3
INSTRUCTIONAL PURPOSE: Enrichment, remediation.
INSTRUCTIONAL TECHNIQUES: Game, drill and practice.

DOCUMENTATION AVAILABLE: In program — program operating instructions, teacher's information, student's instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, sample program output, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To test the students knowledge of four letter words.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Spelling vocabulary of junior high school.

CONTENT AND STRUCTURE: This package contains one disk and a users guide. The program using a 3,000 word dictionary challenges the student's knowledge of four letter words. The program includes four games, or Challenges, that require different combinations of letters for the starting word. The student (or the program) first selects a starting word or set of four characters (letters and/or blanks) according to the rules of the particular Challenge. The program next scans its dictionary and tells the student how many words can be formed from the starting word. The student then enters four-letter words, and the program judges the word right or wrong by whether it appears in the dictionary. When the student has identified all the words he can, the program will report the complete list found in its dictionary. To add to the game-playing aspects, the program keeps track of how many times the student tries each Challenge, the number of possible correct answers, and the number of

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
				●	Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
		●			Student creativity is effectively stimulated.
				●	Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Four-Letter Words, Continued

correct and incorrect responses by the student and reports a score (correct answers less half the incorrect answers) and a grade (the percentage the score is of the possible score in that Challenge).

In addition to the Challenges, the program includes three Search Methods students can use to probe the dictionary for words directly, without the restrictions on starting characters in the Challenges. Using these searches, students can analyze the dictionary on a wider basis than is possible with the Challenges and without the interactive game-playing aspects of the Challenges.

ESTIMATED STUDENT TIME REQUIRED: Varies.

POTENTIAL USES: This package may have beneficial use in a resource room, or for the student who needs to get the feel of the English language and does not pick it up from reading or hearing language spoken.

MAJOR STRENGTHS: The ability to load different dictionaries allows flexibility.

MAJOR WEAKNESSES: The game begins with the student picking the Starting Word from the word challenge, thus setting the level of difficulty. Students could, however, avoid increasing the level in subsequent games by choosing only easy words.

OTHER COMMENTS: Limiting program to four letter words restricts language development too severely. The flexibility to increase the level of difficulty should be included. The help menu doesn't tell why the word choice is invalid. It permits students to make mistakes, but provides no reteaching or explanation of the error. Changing dictionary is limited to the number of letters in words.

microSIFT COURSEWARE EVALUATION

Idea Invasion

VERSION: Apple

PRODUCER:
DLM, Inc.
One DLM Park
PO box 4000
Allen, TX 75002

EVALUATION COMPLETED: July 1984 by the staff and constituents of OTIS in Eugene, Oregon.

COST: $44.00

ABILITY LEVEL: Varies
SUBJECT: Miscellaneous
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II+ or IIe, single disk drive, monitor (color prefered), printer (optional) joystick (optional).
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Game, drill and practice, content-control

DOCUMENTATION AVAILABLE: In supplementary material — program operating instructions, teacher's information, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide drill and practice in recognition of items belonging to specific categories.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students must have prior instruction in concepts covered in game categories.

CONTENT AND STRUCTURE: Consists of a manual, 1 diskette and a set of reproducible worksheets and recordkeeping masters. Idea Invasion is one of six programs in the ARCADEMIC DRILL BUILDERS series. Each program is designed around microcomputer program game,format into which you can put specific content. Your ideas become the game's content and the focus of drill and practice activities. The game involves a friendly Alien Octopus. A.O. protects her underwater territory from invasion using a magic ring that can be moved from arm to arm and then fired at the invaders. The game can be played using the keyboard or joystick. The invaders are elements of various categories defined by the teacher. The student must quickly match each invader with the appropriate category that is displayed below A.O. inorder to be successful at the game. A wide variety of categories and appropriate terms can be used as content in Idea Invasion.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
		●			User support materials are effective.
			●		Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Idea Invasion, continued

A sample list of words is included in the program to provide you and your players an opportunity to see the way the game appears on the screen and how it is played. Directions for creating your own lists of items for a particular category are provided. When at least two category lists have been created, your game will opeate exactly as the sample game does.

ESTIMATED STUDENT TIME REQUIRED: 10-15 minutes daily or three times a week.

POTENTIAL USES: This package can be used for drill and practice of material previously presented by the teacher. It could also be used to focus students attention on a narrow range of items without inducing boredom from repeated practice.

MAJOR STRENGTHS: Program content is adaptable to a wide range of subjects and ability levels given the nine speed levels. Controlling the game length and sound are desirable features for classroom or media center locations. The manual is well written; simple but informative. Creating and editing categories is easily done. The print option of category lists and titles is also useful.

MAJOR WEAKNESSES: The lack of screen instructions requires that an instructor be present for the students to operate the program successfully for the first few games. The Quick Reference Card should come as laminated cards, one for the student and one for the teacher. the eye- and coordination required to manipulate the arrow keys, the space bar and read the categories can be frustrating for younger students.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Kinematics II

VERSION: Apple

PRODUCER:
Vernier Software
2920 SW 89th Street
Portland, OR 97225

EVALUATION COMPLETED: June 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $24.95

ABILITY LEVEL: Grades 9 through post-secondary.
SUBJECT: Sciences
TOPIC: Physics
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Apple II+ or IIe, 48K, one disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving, demonstration.

OTHER FEATURES: Reporting function, instructional management.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information, decision making, measuring/quantifying.

DOCUMENTATION AVAILABLE: In program — program operating instructions. In supplementary materials — instructional objectives, sample program output, program operating instructions, program modifications and design notes.

INSTRUCTIONAL OBJECTIVES: (STATED) To familiarize the student with the quanties used in the study of motion: time, distance, speed, and acceleration.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction on the units of measuring time, distance, speed, and acceleration and their abbreviations is needed.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
●					Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4.7, Instructional Characteristics - 3.7, Technical Characteristics - 3.3.

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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package provides several challenges for students learning kinematics. The student is to control the motion of a truck as it travels across the screen. The student is given an assignment, which consists of some specifics about the truck motion the student is to produce. An example is:

Travel 100 meters in 10 seconds with a starting speed of zero and constant acceleration.

The student calculates the values and enters them. The truck is then drawn moving across the screen. As it moves it paints a dot on the ground every second. After the trip is completed, the results are analyzed and the student is given some feedback on the results. The student may then repeat the same assignment or proceed to the next assignment. There are ten assignments of varying difficulty. The Teacher's Guide contains instructions for adding or changing assignments.

A file may be created to record the name and results for each student who uses the program. The teacher can later retrieve this information.

Three utility programs have been added to the diskette: Large Print, Binary and Calculator.

An 18 page manual is also included.

POTENTIAL USES: The program would provide for teacher demonstration after the concept is taught. The program would provide practice in solving motion problems. Its most effective use would be after a class study of linear motion. This would allow the students to verify their understanding of linear motion formulas by providing for individual student use.

ESTIMATED STUDENT TIME REQUIRED: Would vary for each student; however, one class period per student might be an overall estimate. Much depends on student capability.

MAJOR STRENGTHS: The record-keeping capabilities of the program would facilitate teacher appraisal of student's progress. This package is NOT COPY OR LIST PROTECTED inorder to allow the teacher to modify the package and to make additional copies for student use. Program design notes are included.

MAJOR WEAKNESSES: This package does not provide any instruction on how to calculate the unknown values nor does it provide any corrective guidance when a questions is missed. Students may just start guessing after making a mistake. It could easily become a guessing game.

Letter Man

VERSION: 1982

PRODUCER: Behavioral Engineering
230 Mt. Hermon Rd. #207
Scotts Valley, CA 95066

EVALUATION COMPLETED: August 1984 by the staff and constituents of Region IV Educational Service Center in Houston, Texas.

COST: $34.95

ABILITY LEVEL: Grades 5 through 12
SUBJECT: Business Education
TOPIC: Typewriting
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II, IIe, 48K, 1 disk drive, monitor (color optional).
REQUIRED SOFTWARE: DOS 3.3, Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice, game

DOCUMENTATION AVAILABLE: In program — student's instructions. In supplementary material — instructional objectives, teacher's information, resource reference information.

INSTRUCTIONAL OBJECTIVES: Stated — To learn effective key-finger associations. Inferred — To develop typing speed and accuracy.

INSTRUCTIONAL PREREQUISITES: None indicated.

CONTENT AND STRUCTURE: This package contains one disk and a 6 page Users Guide. "Letter Man" is a 'Pac Man' like game where hungry gobblers chase the user around a maze at faster and faster speeds. Moves are accomplished by typing letters that fill the maze.

ESTIMATED STUDENT TIME REQUIRED: 30-45 minutes a day.

POTENTIAL USES: This package could be used with individuals to supplement a typing course or in conjunction with a keyboarding unit at the elementary level.

MAJOR STRENGTHS: This program could adequately improve both speed and accuracy. The program is enjoyable and challenging.

MAJOR WEAKNESSES: The characters (letters) are difficult to read. Instructions for operating and playing the games were insufficient both on the disk and in the supplemental material. No student records were kept.

OTHER COMMENTS: With better directions, the program would be extremely valuable.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
			●		Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are-used appropriately.
●					Use of package is motivational.
●					Student creativity is effectively stimulated.
			●		Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
			●		User support materials are comprehensive.
			●		User support materials are effective.
			●		Information displays are effective.
			●		Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made. (Note changes under weaknesses or other comments.)

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 1, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

Number Bowling/Space Journey

VERSION: Texas Instruments

PRODUCER: Scott, Foresman and Company
1900 E Lake Avenue
Glenview, IL 60025

EVALUATION COMPLETED: August 1984 by the staff and constituents of R-IV ESD in Houston, Texas.

COST: $39.95

ABILITY LEVEL: Grades 5 through 8
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: ROM Cartridge
REQUIRED HARDWARE: TI 99/4A, TV or monitor.
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Game, drill and practice.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary material — suggested grade/ability level(s), instructional objectives, sample program output, program operating instructions, teacher's information, student's instructions, student worksheets.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To assist user in mastering decimal, fraction, and percent skills and to help in developing faculties for mentally calculating these number operations.

INSTRUCTIONAL PREREQUISITES: (INFERRED) A good understanding of number concepts and order and a mastery of the four basic number operations.

CONTENT AND STRUCTURE: The package reinforces math skills taught at the 6th-8th grades through two games. In "Number Bowling", students earn points according to the speed of their responses. In "Space Journey", students compete against the clock to solve a series of problems.

ESTIMATED STUDENT TIME REQUIRED: "Number Bowling" - 10 minutes. "Space Journey" - 30 minutes.

POTENTIAL USES: "Number Bowling" is the stronger of the two programs; however, "Space Journey" is the most motivating. Although "Space Journey" is an excellent drill and practice program, it involves too many steps for a slower student. No instruction is presented.

MAJOR STRENGTHS: "Number Bowling" is fun, very appealing and offers good practice. Reinforcement in the games motivates students to respond accurately and quickly.

MAJOR WEAKNESSES: The directions in "Space Journey" are somewhat difficult to follow.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low)
Content - 5, Instructional Characteristics - 2, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

Numeration 1

VERSION: Texas Instruments

PRODUCER: Scott, Foresman and Company
1900 E Lake Avenue
Glenview, IL 60025

EVALUATION COMPLETED: August 1984 by the staff and constituents of R-IV ESD in Houston, Texas.

COST: $39.95

ABILITY LEVEL: Grades Pre-school through 3
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: ROM Cartridge
REQUIRED HARDWARE: TI 99/4A, monitor or TV, (speech synthesizer optional).
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Drill and practice and tutorial.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level(s), sample program output, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide drill and practice with counting objects, ordering numbers, and place value.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction in counting, ordering, and place value.

CONTENT AND STRUCTURE: Numeration 1 provides activities in: numbers to 9; comparing numbers; tens; numbers to 99; numbers in order; ordinal numbers; numbers to 999; and a review. Included are the ROM cartridge and a 16 page users' guide.

ESTIMATED STUDENT TIME REQUIRED: The package is designed to be used in sequence. It could be used as a reinforcement or review. Each part takes less than five minutes; the whole package takes twenty to thirty minutes, depending on the user's ability.

POTENTIAL USES: The package contains seven instructional and practice programs and one review program. It would be an excellent tool to use with K-2 students to reinforce number concepts, comparing and ordering numbers, greater than and equal to, place value, and grouping tens. It would also be a good tool to use as a review and for teaching remedial or bilingual students.

MAJOR STRENGTHS: This is an excellent program for early primary. It provides instruction as well as practice.

MAJOR WEAKNESSES: None stated.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Numeration 2

VERSION: Texas Instruments

PRODUCER: Scott, Foresman and Company
1900 E Lake Avenue
Glenview, IL 60025

EVALUATION COMPLETED: August 1984 by the staff and constituents of R-IV ESD in Houston, Texas.

COST: $39.95

ABILITY LEVEL: Grades 2 through 6
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: ROM Cartridge
REQUIRED HARDWARE: TI 99/4A, TV or monitor (speech synthesizer optional).
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Drill and practice.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary material — suggested grade/ability level(s), sample program output, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide drill and practice with place value, ordering numbers, and rounding.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction on place value, ordering numbers, and rounding.

CONTENT AND STRUCTURE: Numeration 2 provides activities in: place values of four digit numbers; comparing numbers; rounding numbers; five and six digit numbers; seven, eight, and nine digit numbers; daily use of numbers; and a review. Included are the ROM cartridge and a 16-page users' guide.

ESTIMATED STUDENT TIME REQUIRED: 10 minutes in parts. 30 minutes in its entirety.

POTENTIAL USES: This package could be used for reinforcement, for drill of skills, or for a review of previously taught skills. The teacher may skip skills to concentrate on areas of need or use in consecutive order.

MAJOR STRENGTHS: The package provides excellent reinforcement of ITBS skills and could be used as a review up to grade 5.

MAJOR WEAKNESSES: Concepts are not taught, and explanations of incorrect responses are not provided.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

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Evaluators indicatd that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 3, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Nutrition Simulation

VERSION: Apple

PRODUCER: EMC Publishing
Changing Times Ed. Service
300 York Avenue
St. Paul, MN 55101

EVALUATION COMPLETED: In September 1984 by the staff and constituents of TIES, in Roseville, MN.

COST: $49.95

ABILITY LEVEL: Grades 9 through postsecondary.
SUBJECT: Nutrition
TOPIC: Food Selection
MEDIUM OF TRANSFER: 5 1/4 in. disk
REQUIRED HARDWARE: Apple II+ or IIe, 1 disk drive, monitor.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard Instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Game and simulation.

DOCUMENTATION AVAILABLE: In Supplementary material - Suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, and teacher's information.

INSTRUCTIONAL OBJECTIVES: To develop the skills of selecting and eating nutritious food while staying on a limited budget.

INSTRUCTIONAL PREREQUISITES: Basic sixth grade reading skills and knowledge of the four basic food groups.

CONTENT AND STRUCTURE: This package contains one disk and a users guide. The package simulates the details of organizing a shopping spree on a fixed budget and purchasing food items in various quantities. Food is then selected and prepared for consumption at various mealtimes. The package rates each prepared menu according to nutritional facts and individual needs.

ESTIMATED STUDENT TIME REQUIRED: Approximately 90 minutes.

POTENTIAL USES: This package could be used in conjunction with the NUTRITION TUTORIAL in home economics or health classes. It could also be used in a consumer affairs unit to simulate life skills problems.

MAJOR STRENGTHS: The reviewers liked having the option of a short or long game. The idea of a "shopping spree" is creative and could be a valuable learning activity relating to the purchase of food items while taking into account a limited budget and calorie values. The unplanned purchases had good variety. The screen layouts are consistent throughout.

MAJOR WEAKNESSES: The major problem with this package is that it operates very slowly. Long delays during the operation of the simulation causes the students to loose interest. At other times the screen changed before the user was finished reading. The directions were minimal and difficult to follow. The evaluation could be expanded to give more explanation of what was done right and wrong.

OTHER COMMENTS: An I/O error occured causing the program to break in line 6065.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package only if certain changes were made. (Note changes under weaknesses or other comments.)

Summary: Scale 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Nutrition Tutorial

VERSION: Apple

PRODUCER: EMC Publishing
300 York Avenue
St. Paul, MN 55101

EVALUATION COMPLETED: August 1984 by the staff and constituents of TIES in Minnesota.

COST: $55.00

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Health, Home Economics
TOPIC: Nutrition
MEDIUM OF TRANSFER: 5 1/2 in. disk
REQUIRED HARDWARE: 48K Apple II+ or IIe, 1 disk drive, monitor, (color preferred).
REQUIRED SOFTWARE: Dos 3.3, Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice and tutorial.

DOCUMENTATION AVAILABLE: In program - suggested grade/ability level(s), program operating instructions, pre-test, post-test, student's instructions. In supplementary material - instructional objectives, prerequisite skills or activities, sample program output, teacher's information, resource/reference information, textbook correlation, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) The nutrition tutorial is designed to teach: identification of the five basic food groups and the foods that compose them; minimum daily requirements (i.e., number of servings recommended from each food group); definitions of relevant terms such as nutrition amd calorie; the function and source of important nutrients; the relationship between calories and activity levels; the format and the importance of information on nutrition levels; factors relevant to menu planning such as the following: the role of snacking, seasoned foods, cost, and the vegetarian diet.

INSTRUCTIONAL PREREQUISITES: (INFERRED) None listed but reading level at 6th grade is needed.

CONTENT AND STRUCTURE: Nutrition Tutorial contains one disk and a User's Guide. The disk contains five interactive tutorials covering food groups, serving size, nutrients and calories, nutrition labeling, and menu planning. Each tutorial provides mastery-based instruction using multiple choice, fill in the blank, true/false, or matching format. The material is broken down into small units. Following every block of instructional material is a mastery exercise which test understanding of key concepts. No test results, record keeping or reporting is included.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●	●			Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●	●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●	●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Nutrition Tutorial, continued

ESTIMATED STUDENT TIME REQUIRED: About 90 minutes to complete all five units. The individual units would take 30 min. for food groups, 15 min. for serving size, 30 min. for nutrients and calories, 7 min. for nutrition labels, and 7 minutes for menu planning.

POTENTIAL USES: This package could be used to provide individualized instruction on nutrition at the secondary level. A few of the five units could be used at the junior high school or upper elementary level. It would also be a good review for college students. The material covered is appropriate for use in health, life science, and home economics as an introduction or review of topics in nutrition.

MAJOR STRENGTHS: The materials in this lesson are thorough, accurate, and presented in a logical and organized manner. The menu provides the flexability to use any of the five sections as needed. The five sections represent a good variety of activities. The tone of the package is positive and motivational. It requires interaction appropriate to junior high school and above but does not 'teach down' to the audience. The reviewers liked the way the package incorporates the number of servings and variations according to the users age group.

MAJOR WEAKNESSES: The branching within the program is minimal. The learner cannot control the sequence. The food group unit as presented could be done as well using the traditional textbook approach. There is too much reading and it is presented too slowly. It presents too much information on the nutrients before feedback is required. The support materials are for the teacher and not for the student. Sometimes it is difficult to identify the food being pointed to in the graphic displays.

OTHER COMMENTS: A color monitor is recommended for effective use of this package. Without the color monitor some questions are unclear.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Orbit II

VERSION: Apple

PRODUCER: Vernier Software
2920 SW 89th Street
Portland, OR 97225

EVALUATION COMPLETED: June 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $24.95

ABILITY LEVEL: Grades 9 through post-secondary
SUBJECT: Sciences
TOPIC: Physics
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Apple II+ or IIe, 48K, 1 disk drive and monitor.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving, demonstration

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, decision making, measuring/quantifying.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — instructional objectives, program operating instructions, teacher's information, student's instructions, follow-up activities, program modification, design notes.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide the student with the opportunity to experiment with the paths of orbiting satellites.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction of Newton's Laws of Motion.

CONTENT AND STRUCTURE: Allows students to experiment with satellite motion. Students are presented with nine challenges. Three examples are:

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3.7, Instructional Characteristics - 2.3, Technical Characteristics - 3.3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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Obtain a circular orbit by launching from a space station one earth radius above the earth.

Determine the escape velocity of the earth experimentally.

Use the thruster rockets to correct the elliptical orbit of the TDRS-A satellite and put it in a geosynchronous orbit (as NASA did in the spring of 1983).

The student selects the launch speed and angle and the satellite is launched. The satellite motion is plotted and the heading, speed and distance from the earth are continuously displayed at the bottom of the screen. Thruster rockets may be used for minor course corrections. When the satellite motion is interrupted, the elapsed time and final speed are displayed.

The 23 page manual includes solutions and background information for the challenges, as well as instructions on using the program in the manual mode for demonstrations.

POTENTIAL USES: The best potential use of this program is as a classroom demonstration by the teacher to show application of orbital calculations.

ESTIMATED STUDENT TIME REQUIRED: Average student learning time would be approximately two class periods.

MAJOR STRENGTHS: Graphic treatment of subjects is a strength. This package is NOT COPY OR LIST PROTECTED inorder to allow the teacher to modify the package and to make additional copies for student use. Program design notes are included.

MAJOR WEAKNESSES: Program has very few options for creative and critical thinking. If the student is allowed to use the package without teacher direction, guessing becomes the easiest route, and trial and error dominates use. Student users quickly found that guessing was the easiest way to adjust speeds and direction of launch in order to produce an orbit. The only instruction provided to teach how to calculate correct values is contained in the User's Manual.

microSIFT COURSEWARE EVALUATION

Picnic

VERSION: 2.1 - Apple

PRODUCER: Computer Skill Builders
3130 N Dodge Blvd.
PO Box 42050
Tucson, Arizona 85723

EVALUATION COMPLETED: September 1984 by the staff and constituents of The Program for Research and Evaluation for Public Schools, Mississippi.

COST: $39.95

ABILITY LEVEL: Grades 4 through post-secondary.
SUBJECT: Language Arts
TOPIC: Spelling
MEDIUM OF TRANSFER: 5 1/2 in. disk
REQUIRED HARDWARE: 48K Apple II Family, 1 disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment.
INSTRUCTIONAL TECHNIQUES: Drill and practice and game.

DOCUMENTATION AVAILABLE: In program - program operating instructions and student's instructions. In supplementary material - instructional objectives, sample program output, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) Develop skills in problem solving, spelling analysis and pattern recognition, alphabetic sequencing, logic and word recall. Detailed educational goals are listed on page 4 on the documentation manual.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Reading level must be 4th grade or above.

CONTENT AND STRUCTURE: This package contains one disk and a Users Guide. Picnic is a game where the user tries to find the secret spelling pattern in words selected by the computer to bring something to the PICNIC. You can play against opponents (2 to 18 players) or against Hugo, your computer opponent. Spelling is checked against a 2,300 word list.

Play on one of three levels of difficulty. Level 1 patterns depend only on the spelling of the keyword. Levels 2 and 3 show words whose pattern depends on such factors as the last correct word or the player's name. The computer selects patterns at random, offering continual challenge to children and adults.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
		●			Content has educational value.
		●			Content is free of stereotypes.
		●			Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
				●	Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
		●			Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

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Evaluators indicated that they would not use or recommend this package. (Note reasons under weaknesses.)

Summary: Scale 5 (High) to 1 (Low).
Content - 2, Instructional Characteristics - 1, Technical Characteristics - 1.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Picnic continued

ESTIMATED STUDENT TIME REQUIRED: 15 minutes per day. Extensive time would be required especially at the lower grade levels.

POTENTIAL USES: As an enrichment activity with groups of students at the elementary level. As a problem solving activity.

MAJOR STRENGTHS: The idea of using strategies to find patterns is good. The number of words in the word list (2,300) is very large. The three levels of difficulty are very useful. Students do have to be good problem solvers inorder to be successful with the game, however, the package does not teach problem solving.

MAJOR WEAKNESSES: This package would require a lot of work on the part of the teacher inorder to be useful. The purpose of the package is not clear. The level of difficulty is not appropriate for most students in the elementary grades. The program contains bugs at level two.

OTHER COMMENTS: Clues built into the program to help the player make guesses would enhance the program greatly.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Projectiles II

VERSION: Apple

PRODUCER: Vernier Software
2920 SW 89th Street
Portland, OR 97225

EVALUATION COMPLETED: June 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $24.95

ABILITY LEVEL: Grades 9 through post-secondary.
SUBJECT: Sciences
TOPIC: Physics
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Apple II+ or IIe, 48K, one disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving, demonstration.

SCIENCE PROCESSES INVOLVED: Acquiring infomation, interpreting information, using the Scientific Method, desicion making, measuring/quantifying.

DOCUMENTATION AVAILABLE: In program — program operating instructoins, teacher's information, student's instructions. In supplementary materials — instructional objectives, program operating instructions, teacher's information, resorce/reference information, student's instructions, textbook correlation, follow-up activities, program modification and design notes.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide the opportunity to experiment with projectile motion.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction on the effects of the acceleration due to gravity on projectiles.

CONTENT AND STRUCTURE: Allows students to experiment with projectile motion. Nine interesting challenges are presented for student solution. One example:

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3.7, Instructional Characteristics - 3, Technical Characteristics - 3.

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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Hit a target at a known range by launching horizontally from a 100 meter cliff assuming no air resistance.

Various modes complicate the situation by changing the launch site, adding air resistance or wind, or causing the targe to move. The target position is selected randomly. The student enters the launch speed and launch angle for the shot. The projectile motion is then displayed on the screen. As the trajectory is drawn, the projectile's height, range and elapsed time in the air is displayed on the screen.

Some challenges involve taking data and investigating the relationship between variables (e.g., launch speed and range).

The program may also be used in the manual mode for demonstrations.

A 21 page manual with background information and solutions for the challenges is included.

POTENTIAL USES: The program's strongest potential use is as a demonstration for classroom study in Physics.

ESTIMATED STUDENT TIME REQUIRED: Student time involvement in the program would vary. Average could possible be two class periods.

MAJOR STRENGTHS: Program appears to be fairly flexible with strong graphics and possible use for drill and practice. This package is NOT COPY OR LIST PROTECTED inorder to allow the teacher to modify the package and to make additional copies for student use. Program design notes are included.

MAJOR WEAKNESSES: Program could very easily become a guessing game. Without supervision, this program becomes another trial and error exercise. Students commented that the program "seems like a game and can get boring" and were concerned that it had "lots of potential for horsing around."

OTHER COMMENTS: If used without proper teacher direction, the program is a game which does not teach how to employ the basic principles of projectile motion. The program's objectives may be achieved by guessing. Sound effects become monotonous, and a quick check of the manual's directions failed to provide a means to eliminate them.

Pyramid Puzzler

VERSION: Texas Instruments

PRODUCER: Scott, Foresman and Company
1900 E Lake Avenue
Glenview, IL 60025

EVALUATION COMPLETED: August 1984 by the staff and constituents of Region IV Educational Service Center in Houston, Texas in Houston, Texas.

COST: $39.95

ABILITY LEVEL: Grades 3 through 6
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: ROM Cartridge
REQUIRED HARDWARE: TI 99/4A, monitor or TV
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Game, drill and practice.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary material — suggested grade ability level(s), sample program output, program operating instructions, teacher's information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide drill and practice on multiplication of whole numbers.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Knowledge of the multiplication facts.

CONTENT AND STRUCTURE: Pyramid Puzzler includes one program where the student moves toward the top of the pyramid by quickly and accurately answering multiplication problems. The program provides three levels of difficulty and one or two person formats. Included are the ROM cartridge and a 16 page users' guide.

ESTIMATED STUDENT TIME REQUIRED: 15-20 minutes per level.

POTENTIAL USES: The package is designed to be drill and practice and is designed to motivate two students to compete against one another by using their knowledge of multiplication facts.

MAJOR STRENGTHS: The program provides excellent practice in multiplication facts.

MAJOR WEAKNESSES: Since the program is designed for two players, it's not very challenging for one. Playing against the computer is too simple.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

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Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 2, Technical Characteristics - 5

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package

micro SIFT COURSEWARE EVALUATION

Ship Ahoy/Word Scramble

VERSION: 2.1 - Apple

PRODUCER:
Computer Skill Builders
3130 N Dodge Blvd.
PO Box 42050
Tucson, Arizona 85723

EVALUATION COMPLETED: September 1984 by the staff and constituents of The Program of Research and Evaluation for Public Schools, Mississippi.

COST: $39.95

ABILITY LEVEL: Grades 5 through post-secondary.
SUBJECT: Language Arts
TOPIC: Vocabulary
MEDIUM OF TRANSFER: 5 1/2 in. disk
REQUIRED HARDWARE: 48K Apple, 1 disk drive, monitor.
REQUIRED SOFTWARE: Applesoft and Dos 3.3
INSTRUCTIONAL PURPOSE: Remediation, standard instruction and enrichment.
INSTRUCTIONAL TECHNIQUES: Drill and practice, game, and control content.

DOCUMENTATION AVAILABLE: In Program — program operating instructions, student's instructions. In Supplementary Material — instructional objectives, sample program output, program operating instructions, teacher's information, student's instructions

INSTRUCTIONAL OBJECTIVES: (STATED) To build vocabulary and increase word recognition skills. Other objectives are stated more precisely in the Documentation.

INSTRUCTIONAL PREREQUISITES: (INFERRED) To be at a 5th grade reading level.

CONTENT AND STRUCTURE: This package includes two word skill games that build vocabulary and increase word recognition skills.

Each program can process 500 words of up to 25 letters each. You can add specific vocabulary, target subject areas, and modify the level of difficulty.

SHIP AHOY challenges players to guess a secret word. Each correct letter appears in the word while each incorrect guess causes the ship to sink a little more.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
		●			Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
		●			Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
		●			Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would not use or recommend this package. (Note reasons under weaknesses.)

Summary: Scale 5 (High) 1 (Low)
Content - 2, Instructional Characteristics - 1, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Ship Ahoy/Word Scramble, continued

WORD SCRAMBLE presents players with words whose letters have been randomly rearranged. If the player is having difficulty guessing the word, the computer gives the player a hint: the correct first and last letters of the word.

ESTIMATED STUDENT TIME REQUIRED: 20 minutes per word list.

POTENTIAL USES: With individual students to provide drill and practice with a spelling list.

MAJOR STRENGTHS: The package is easy to use. With the help of an adult even young children are able to use the program. Students found the word scramble game to be motivating.

MAJOR WEAKNESSES: The package should include at least one ready made word list for familiarization and demonstration purposes. Reviewers questioned the educational value of word scramble and word spelling games such as these. They do not appear to increase word recognition or vocabulary skills. The activity promotes random guessing, especially with young children, unless the user possesses a well developed vocabulary in the area presented. To develop vocabulary implies an understanding of the meaning of the words which these programs do not address. If a teacher were to use this package it would require a great deal of effort. The word scramble program contained bugs.

micro SIFT COURSEWARE EVALUATION

Star Maze

VERSION: Texas Instruments

PRODUCER: Scott, Foresman and Co.
1900 E Lake Avenue
Glenview, IL 60025

EVALUATION COMPLETED: August 1984 by the staff and constituents of R-IV ESD in Houston, Texas.

COST: $39.95

ABILITY LEVEL: Grades 3 through 6
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: ROM Cartridge
REQUIRED HARDWARE: TI 99/4A, Monitor or TV
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Game, drill and practice.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary material — Suggested grade/ability level(s), sample program output, program operating instructions, teacher's information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide drill and practice on division of whole numbers.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction on dividing whole numbers.

CONTENT AND STRUCTURE: Star Maze includes one program where the user moves from star to star, scoring points by correctly answering division problems. Three levels of whole number division are provided. No instruction of division is included. Included are the ROM cartridge and a 16-page users' guide.

ESTIMATED STUDENT TIME REQUIRED: 15 to 20 minutes per level.

POTENTIAL USES: The package would be good for reinforcing division facts as well as completing long division problems for the advanced and master levels. Paper and pencil might be needed, but it would be challenging for students to complete problems in their heads.

MAJOR STRENGTHS: This is a high-interest appealing program. It provides excellent division practice.

MAJOR WEAKNESSES: A drawback is that paper and pencil are sometimes needed.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale 5 (High) to 1 (Low)
Content - 5, Instructional Characteristics - 2, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Tellstar

VERSION: Level I

PRODUCER: Scharf Software Systems
Suite 1068, 2111-M 30th Street
Dept. TJ
Boulder, CO 80301

EVALUATION COMPLETED: July 1984 by staff and constituents of Jefferson County Schools, Denver, Colorado.

COST: $39.95

ABILITY LEVEL: Grades 9 - post-secondary
SUBJECT: Science
TOPIC: Astronomy
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II Family, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Enrichment
INSTRUCTIONAL TECHNIQUES: Laboratory tool.
SCIENCE PROCESSES INVOLVED: Measuring/quantifying.

DOCUMENTATION AVAILABLE: In supplementary materials — sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To reproduce the night sky from any location on earth at any time over a period of 3000 years.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need a knowledge of celestial coordinate systems.

CONTENT AND STRUCTURE: This package consists of extensive users manual with instructions and appendices. It locates, identifies and describes stellar objects visible from any spot on earth at any time.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
				●	Instruction integrates with prior learning.
				●	Learning can be generalized.
●					User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

POTENTIAL USES: This package provides a small planetarium for the science classroom. Many units in Astronomy could make use of this program to bring the night sky into the classroom. It could be used as a teacher demonstration tool or by individuals and small groups.

ESTIMATED STUDENT TIME REQUIRED: The program will require one class period for understanding the functions, then the time needed is unlimited depending on the task chosen by the user.

MAJOR STRENGTHS: This package is a valuable, accurate, versatile tool for seeing the sky. The labs that can be created from this tool could take up a whole quarter. It is excellent for high school and college students.

MAJOR WEAKNESSES: The program takes too much time for calculations.

OTHER COMMENTS: A teacher will have to write structured labs/assignments or use it in a demonstration mode for it to be useful in seventh and eighth grade.

micro SIFT COURSEWARE EVALUATION

That's My Story

VERSION: Apple

PRODUCER: Learning Well
Department AA
200 South Service Road
Roslyn Heights, NY 11577

EVALUATION COMPLETED: August 1984 by the staff and constituents of The Area Cooperative Educational Services in Hamden, Connecticut.

COST: $59.95

ABILITY LEVEL: Grades 3 through 12
SUBJECT: Language Arts
TOPIC: Writing
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Apple II, one disk drive, and monitor (printer). Also available for IBM PC.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Word Processing

DOCUMENTATION AVAILABLE: In program — sample program output, program operating instuctions. In supplementary materials — instructional objectives, sample program output, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To create a structure that motivates the creative writing process.

INSTRUCTIONAL PREREQUISITES: NONE

CONTENT AND STRUCTURE: This package contains 1 disk and an 18 page User's Guide. Students individually or in groups may work from a starter story given by the computer by branching from "what ifs". The teacher may create new starter stories, view all of selected copies and receive hard copies.

ESTIMATED STUDENT TIME REQUIRED: Varies.

POTENTIAL USES: Reviewers suggest the program has more merit used with small groups or pairs rather than with individual students. Individual students who have difficulty expressing themselves or students who take an exceptionally long time to write might profit from the program.

MAJOR STRENGTHS: The program uses simple word processing to create the story. The only problem is trying to delete more than one line. For students who have trouble thinking of something to write about, the program would help support the first steps. Being given a starter is not the same as prewriting, however, and teachers should still conduct some kind of prewriting activity to involve student's feelings and ideas more actively.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

That's My Story, continued

MAJOR WEAKNESSES: By erasing story from screen after a student has chosen to write a "what if", they have no opportunity to tie their addition into what was last written unless they can remember word for word. As a result, stories get choppy or totally disconnected. This also encourages the student to write shorter stories limited to screenfuls. A mechanism could be found to allow students to create story starters.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Tribbles

VERSION: Apple

PRODUCER: Conduit
The University of Iowa,
Oakdale Campus
Iowa City, IA 52244

EVALUATION COMPLETED: June 1984 by the staff and constituents of Jefferson County Schools, Lakewood, Colorado.

COST: $40.00

ABILITY LEVEL: Grades 10 through post-secondary
SUBJECT: Science
TOPIC: Scientific Method
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, or IIe, single disk drive and monitor.
REQUIRED SOFTWARE: DOS 3.3 and Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction

INSTRUCTIONAL TECHNIQUES: Tutorial, simulation, problem solving.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the scientific method.

DOCUMENTATION AVAILABLE: In program — Program operating instructions. In supplementary materials — Suggested grade/ability level, prerequisite skills/activities, program operating instructions, teacher's information, student's instructions, student worksheets.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To be able to use the scientific method to solve problems.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need to be able to follow written instructions.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package consists of one diskette and a 43-page Student Tutorial Booklet. This introductory unit on the scientific method consists of a written tutorial and a computer simulation. The tutorial presents students with a problem and guides them to its solution. The computer simulation provides the data for making observations and for forming tentative explanations and testing predictions. To eliminate the variable of background knowledge, the problem takes place on an alien planet inhabited by tribbles.

POTENTIAL USES: The material can be used independently or in small groups (2-3) as a tutorial in problem solving. It could be used as an enrichment for a scientific problem solving unit. It could be used with high ability junior high students.

ESTIMATED STUDENT TIME REQUIRED: Minimum amount of time would be 2 hours.

MAJOR STRENGTHS: The scientific method of problem solving and the investigative skills involved are central to all science curricula and have applicability to many areas. The manual does an excellent job of leading the student through the program. It is a very effective student tutorial manual.

MAJOR WEAKNESSES: No teacher documentation was found in the package. The user can defeat the program itself by reading ahead in the student manual. Once the students solve the "Tribble" problem the package is of little use.

OTHER COMMENTS: This is an excellent package for high ability, academic-oriented students such as Gifted/Talented classes. The program and the manual are powerful for the development of problem solving processes and deductive reasoning.

micro SIFT COURSEWARE EVALUATION

Typing Strategy

VERSION: 1982

PRODUCER: Behavioral Engineering
230 Mt. Hermon Rd. #207
Scotts Valley, CA 95066

EVALUATION COMPLETED: August 1984 by the staff and constituents of Region IV Educational Service Center in Houston, Texas.

COST: $39.95

ABILITY LEVEL: Grades 5 through 12
SUBJECT: Business Education
TOPIC: Typewriting
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II, IIe, 48K, 1 disk drive, monitor.
REQUIRED SOFTWARE: DOS 3.3, Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice, game

DOCUMENTATION AVAILABLE: In program — sample program output, student's instructions. In supplementary material — instructional objectives, program operating instructions, teacher's information, resource reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To lead the user to full keyboarding/typing competency (80-120 wpm with 95% accuracy).

INSTRUCTIONAL PREREQUISITES: None stated.

CONTENT AND STRUCTURE: This program contains one disk and an 8 page Users Guide. It uses animated hands and keyboard to teach keyboarding accuracy. Drills, exercises, and games are used to increase both speed and accuracy.

ESTIMATED STUDENT TIME REQUIRED: The documentation specifies, "an hour a day for five days and you will type 20-30 wpm accurately".

POTENTIAL USES: "Typing Strategy" could be used with individuals to supplement a keyboarding unit at the elementary level or a typing course at the secondary level.

MAJOR STRENGTHS: It is excellent for learning the position of keys and correct fingering.

MAJOR WEAKNESSES: The instructions are inadequate. The program would be difficult for a student to use without assistance.

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.
	●				Student creativity is effectively stimulated.
●					Feedback is effectively employed.

SA	A	D	SD	NA	
●					Learner controls rate and sequence.
		●			Instruction integrates with prior learning
●					Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would would use or recommend use of this package only if certain changes were made. (Note changes under weaknesses or other comments.)

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 3, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Vector Addition II

VERSION: Apple

PRODUCER: Vernier Software
2920 SW 89th Street
Portland, OR 97225

EVALUATION COMPLETED: June 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $24.95

ABILITY LEVEL: Grades 9 through post-secondary.
SUBJECT: Sciences
TOPIC: Physics
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Apple II+ or IIe, 48K, one disk drive, monitor.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Demonstration.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — instructional objectives, program operating instructions, teacher's information, student's instructions, follow-up activities, program modification and design notes.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide a graphic representation of the sum of vector.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction on vectors and vector addition.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4.7, Instructional Characteristics - 4, Technical Characteristics - 3.7.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This program graphically adds and subtracts vectors. Magnitude and direction are input for each vector to be added or subtracted. A maximum of 19 vectors may be used. Arrows representing the vectors are first drawn tail-to-tail and then redrawn head-to-tail. The resultant is drawn and flashes on and off to distinguish it from the other arrows. The magnitude and direction of the resultant are printed at the bottom of the screen. On a color monitor, each vector is drawn in a different color.

At the completion of a run you may elect to add the same vectors in reverse order, display or print the components of each vector, or go on to another vector problem.

Vector Addition II provides a quick, efficient way of going over physics problems involving vectors.

Three utility programs are included on the diskette: Computer Stopwatch, Hex-decimal and Rounder.

A 13 page manual is also included.

POTENTIAL USES: Program utilization could be directed toward vector addition after initial instruction. It could be used as demonstration, then as drill and practice on vector addition, perhaps in a lab. However, the program is very elementary and may not be needed for more than three periods for in-class use. Emphasis should be placed on initial teacher instruction prior to student use.

ESTIMATED STUDENT TIME REQUIRED: It probably takes students 30 minutes to learn how to use the program. Further learning would vary until student masters concept level involved.

MAJOR STRENGTHS: The program offers a variety of vectors which may be added. This provides Drill and Practice in a subject of curricular importance. Such exposure is needed by beginning Physics students. This package is NOT COPY OR LIST PROTECTED inorder to allow the teacher to modify the package and to make additional copies for student use. Program design notes are included.

MAJOR WEAKNESSES: Its strength of Drill and Practice precludes extension of concept, thus limiting its use to do one thing over and over.

OTHER COMMENTS: If the user chooses to draw the vectors in colors, some vertical vectors may not completely appear on the screen. If the vectors are drawn in white this will never happen.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Wave Addition II

VERSION: Apple

PRODUCER: Vernier Software
2920 SW 89th Street
Portland, OR 97225

EVALUATION COMPLETED: June 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $24.95

ABILITY LEVEL: Grades 11 through post-secondary.
SUBJECT: Sciences
TOPIC: Physics
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Apple II+ or IIe, 48K, one disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft DOS 3.3.
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving, demonstration.

SCIENCE PROCESSES INVOLVED: Interpreting information, measuring/quantifying.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, follow-up activities, program modification and design notes.

INSTRUCTIONAL OBJECTIVES: (STATED) To demonstrate how waves add together according to the superposition principal.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction on wave addition.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3.3, Instructional Characteristics - 2.7, Technical Characteristics - 2.7.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: Graphically demonstrates the superposition of waves. The program operates in nine different modes. Some modes are programmed to demonstrate various principles with no additional student input. Examples are Fourier synthesis and beats. In other modes, the student selects the waves to be added. Up to nine waves may be added. The result of the superposition of the waves is drawn on the screen after the component waves are drawn.

The program provides a quick and efficient way of demonstrating many wave phenomena, including: the relationship between wavelength, frequency and wave speed; constructive and destructive interference; beats; fourier synthesis of a sawtooth wave, square wave and triangular wave; and the effect on wave shape when various overtones are added.

Three utility programs are included on the diskette: Large Print, Binary, and Calculator. An 18 page manual is also included.

POTENTIAL USES: This program is more suited to individual teacher demonstrations of ripple effect for a class. It may also be utilized for laboratory use on wave studies. Potential use of the program on an individual student basis is not anticipated on a frequent basis.

ESTIMATED STUDENT TIME REQUIRED: The program would require a variant amount of time from 30 minutes to 90 minutes to identify what the package is capable of doing.

MAJOR STRENGTHS: Excellent graphics of wave super positions; simulation of wave addition is good. This package is NOT COPY OR LIST PROTECTED inorder to allow the teacher to modify the package and to make additional copies for student use. Program design notes are included.

MAJOR WEAKNESSES: Graphics tend to become "cluttered" when several waves are added. This is very true on small computer CRT's. Harmonic sections develop too slowly. The utility programs are of minimal use.

OTHER COMMENTS: Students using the program identified strengths and weaknesses similar to teacher evaluations. Few would not use it; however, few would recommend it highly.

Wiz Works

VERSION: Apple

PRODUCER: DLM, Inc.
One DLM Park
PO Box 4000
Allen, TX 75002

EVALUATION COMPLETED: July 1984 by the staff and constituents of OTIS in Eugene, Oregon.

COST: $44.00

ABILITY LEVEL: Varies
SUBJECT: Miscellaneous
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II, IIe, 1 disk drive, monitor (color preferred), printer (optional), joysticks (optional).
REQUIRED SOFTWARE: DOS 3.3 Applesoft.
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Content control, drill and practice, game.

DOCUMENTATION AVAILABLE: In supplementary material — program operating instructions, teacher's information, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide individually tailored learning experiences with spelling words, numerical or letter sequences, math problems, or symbols.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Student familiarity with content provided by teacher, and with operation of computer. Students should also be given instruction or demonstration on playing the game prior to running the program for the first time.

CONTENT AND STRUCTURE: This package includes a manual, one diskette, and a set of Blackline Masters. The program is designed around a microcomputer program in game format to which teachers add specific content. The games provide drill and practice activities, and can be played using the keyboard or joystick. The game can be altered by teacher by changing options such as speed, running time, or sound. Teachers can create 36 games of differing content per disk. In addition, game titles and lists can be printed. The worksheets are for timed practice drills, record-keeping, and a quick reference chart summarizing commands and keystrokes.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
				●	Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
		●			Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Wiz Works, continued

ESTIMATED STUDENT TIME REQUIRED: As the content would change given teacher evaluation and input, achievement of objectives would depend on student ability.

POTENTIAL USES: Practice and review of spelling patterns.

MAJOR STRENGTHS: The capability of taking teacher input and incorporating it into a computerized game format, according to individual student needs.

MAJOR WEAKNESSES: The game moves a little too fast for younger students.

OTHER COMMENTS: The firing and moving controls are too confusing and should be limited to fewer keys. The program should include directions when first starting up which can be bypassed by experienced users. However, joysticks may be used.

Mathematics Life Skills, Volume 2: World of Work

VERSION: Apple

PRODUCER: Computer Age Education, Inc.
5225 Wisconsin Avenue, NW
Suite 601
Washington, D. C. 20015

EVALUATION COMPLETED: August 1984 by the staff and constituents of the East Central Network for Curriculum Coordination in Springfield, Illinois.

COST: $29.95
Complete Series $79.95

ABILITY LEVEL: Grades 6 through postsecondary.
SUBJECT: Mathematics, Vocational Education
TOPIC: Career Exploration
MEDIUM OF TRANSFER: 5 1/4 in. disk.
REQUIRED HARDWARE: 48K Apple II, II+, or IIe, single disk drive, monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Remediation, standard instruction
INSTRUCTIONAL TECHNIQUES: Tutorial, drill and practice

DOCUMENTATION AVAILABLE: In Program - Program operating instructions and student's instructions. In Supplementary material - Suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, pre-test, teacher's information, resource/reference information, student's instructions, and student worksheets.

INSTRUCTIONAL OBJECTIVES: STATED
To teach about work related concepts such as salaries, commissions, pay periods, and paycheck records.

INSTRUCTIONAL PREREQUISITES: STATED
The teacher will need to select the appropriate problem set, prior to the students using the computer. The students need to be familiar with whole number operations, fractions, decimals, and calculators.

CONTENT AND STRUCTURE: This package consists of one diskette, a teacher's guide, and a user's guide. It is the second volume in Mathematics Life Skills Series. It helps the student understand many important work related concepts such as salaries, commissions, pay periods, and paycheck records.

The lessons are self-explanatory and can be used by students with no prior computer experience. No preliminary instruction by the teacher is necessary since complete instructions are available on the disk as well as in the user's guide.

Continued on back

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content has educational value.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.
				●	Student creativity is effectively stimulated.
●					Feedback is effectively employed.

SA	A	D	SD	NA	
●					Learner controls rate and sequence.
				●	Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
		●			Information displays are effective.
	●				Users can operate easily and independently.
●					Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale: 5 (High) 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more researchers who are representative of potential users of the courseware package.

World of Work, continued

The program includes four independent lessons each including several sequential problem sets. Each set helps the student learn one objective. Student progress is measured by the computer to determine when the objective has been mastered.

Lessons and problem sets within the lessons can be selected according to student needs. Once a problem set is selected, the student solves problems that teach the concept while simultaneously testing for mastery.

There are three options available to aid the student in finding the solution to the problem. They are: entering the solution to the problem, turning on the on-screen arithmetic function calculator for computations, and requesting help.

ESTIMATED STUDENT TIME REQUIRED: Since the student can begin with any lesson and any problem within a lesson, it is possible for the student to complete the package in several short sessions. The number and duration depends on the age, motivation and ability of the student. A rough estimate might be one and one half hours.

POTENTIAL USES: This package could be used with individuals or pairs in a general mathematics or life skills course as remediation at the junior high school level or above.

MAJOR STRENGTHS: Motivational and fun for students! Great graphics!

MAJOR WEAKNESSES: The only time the user is told the keys to use on the calculator is in the beginning when one says "yes" to seeing instructions. It appears obvious, but could be confusing to students.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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50 Defense vs Run

VERSION: Apple

PRODUCER: Sterling Swift
Publishing Company
7901 South IH-35
Austin, Tx 78744

EVALUATION COMPLETED: September 1984 by the staff and constituents of The Program for Research and Evaluation for Public Schools, Mississippi.

COST: $99.95

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Physical Education
TOPIC: Football
MEDIUM OF TRANSFER: 5 1/2 in. disk
REQUIRED HARDWARE: Apple II+ or IIe, 48K, 1 disk drive, monitor.
REQUIRED SOFTWARE: Dos 3.3
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Tutorial.

DOCUMENTATION AVAILABLE: In program - program operating instructions, student's instructions. In supplementary material - instructional objectives, program operating instructions, post-test, teacher's information, resource/reference information, student's instructions, student worksheets.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To teach the fundamentals of football. A detailed scope and sequence is given on page 7 of the documentation.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior exposure to the game of football.

CONTENT AND STRUCTURE: This package is the first of a 5-part series designed to teach the fundamentals of football. The package consists of two disks (each with three lessons) and a Coach's Manual. The software is intended to help players and those interested in football, in general, to understand the fundamentals of each position on the team. It combines instructional tutorials, testing of fundamental concepts and principles, with reinforcement feedback, and graphics (including an automated chalkboard). The six lessons included in this package are Defensive Goals, Principles, End Play, Linebacker Play, Perimeter Play, and Down Lineman Play.

The remaining packages in the CEFT series — 50 DEFENSE VS PASS, OFFENSE (RUN), OFFENSE (PASS), KICKING (OFFENSE AND DEFENSE) — will be released at a later date.

ESTIMATED STUDENT TIME REQUIRED: Total time: 2 hours.

POTENTIAL USES: Appropriate for use at junior high level with beginners or at higher levels as an introduction for novices.

MAJOR STRENGTHS: The package provides an excellent introduction to the topic and is easy to operate.

MAJOR WEAKNESSES: The screen displays are too slow. More variety in the method of introduction would add interest.

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content has educational value.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
				●	Graphics/sound/color are used appropriately.
	●				Use of package is motivational.
				●	Student creativity is effectively stimulated.
	●				Feedback is effectively employed.

SA	A	D	SD	NA	
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

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Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low)
Content - 4, Instructional Characteriestics - 3, Technical Characteristics - 3.

X

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Regional
Educational
Laboratory

300 S.W. Sixth Avenue • Portland, Oregon 97204 • (503) 248-6800
TELEX: 701716 CABLE: NWREL SOURCE: STL058

rec'd. 1/7/85

DATE: December 1984

TO: All Dissemination Sites

FROM: Dave Weaver

SUBJECT: LIBRA REVIEWS

Enclosed you will find a set of 99 reviews of junior high school science software for your dissemination. These reviews were made possible by a grant from SOHIO corporate contributions and differ slightly from the regular MicroSIFT reviews. The forms used to produce these reviews were designed to take into account the special interests of science instruction.

Also enclosed is a printout of the updated MicroSIFT Index containing Set 12 and the enclosed science reviews. The index is sorted alphabetically by title and by subject. Anyone interested in obtaining a PFS-File data disk for the Apple containing this information may do so by sending a self-addressed mailing label and a P.O., check, or money order for $10.00 to the attention of Lynn Green (soon to be Lynn VanBladeren) at the address above.

Thank you for your participation in the dissemination of MicroSIFT reviews. If we may be of any further assistance, don't hesitate to write to the above address or call 503/248-6800 extension 517.

AN EQUAL OPPORTUNITY EMPLOYER

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE courseware.

Acid Rain

VERSION: Apple

PRODUCER: Diversified Educational Enterprises
725 Main Street
Lafayette, IN 47901
317/742-2690

EVALUATION COMPLETED: November 1984 by the staff and constituents of Montgomery County Public Schools, Rockville, Maryland.

COST: $60.00

ABILITY LEVEL: Grades 5 through 12
SUBJECT: Sciences
TOPIC: Ecology, Environmental Education, Biology
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II Family, 48K, 1 disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment.

INSTRUCTIONAL TECHNIQUES: Tutorial and simulation.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information and decision making.
SCIENCE CONCEPTS INVOLVED: Cause-effect, change, cycle, interaction.

DOCUMENTATION AVAILABLE: In Program — program operating instructions, student's instructions. In Supplementary Material — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, post-test, teacher's information, resource/reference information, student's instructions, student worksheets, textbook correlation, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To give students an overview of the problem of acid rain.

INSTRUCTIONAL PREREQUISITES: None stated.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
		●			Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalised.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low)

Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package contains one disk and a 41 page User's Guide. Acid Rain is a tutorial that explores the relationship between the generation of electrical power and the deterioration of the aquatic environment. It contains an interactive quiz and a simulation of a lake being destroyed by acid rain.

POTENTIAL USES: The program can be used as a lead in for a unit on acid rain, for a discussion of relevant science issues, or for a lab introduction. The program requires some background on acid rain.

ESTIMATED STUDENT TIME REQUIRED: One class or lab period.

MAJOR STRENGTHS: The documentation and graphics are excellent.

MAJOR WEAKNESSES: The program could have incorporated a data collection and analysis section. The package lacks a concise definition of acid rain.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Air Pollution

VERSION: Apple, copyright 1982

PRODUCER: Educational Materials and
Equipment Company
P.O. Box 17
Pelham, NY 10803

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: Apple; $37.00
TRS-80; $38.50

ABILITY LEVEL: Grades 7 through 12
SUBJECT: Sciences
TOPIC: Environmental Education
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II, II Plus, IIe, or IIc, single disk drive, and monitor. Also available for TRS-80 Model III and IV.
REQUIRED SOFTWARE: DOS 3.3 and Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Tutorial, simulation, laboratory tool

OTHER FEATURES: Content control
SCIENCE PROCESSES INVOLVED: Organizing information, interpreting information, using the Scientific Method, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Cause-effect, change, interaction.

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — instructonal objectives, program operating instructions, teacher's information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) The AIR POLLUTION program will help students to: understand the factors which affect atmospheric CO pollution, manipulate a computer model and interpret results, evaluate hypotheses in light of experimental results, analyze data and improve problem-solving skills, design experiments, and plan a research project.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need a general knowledge of the terminology used in discussing air pollution.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package consists of a circulation disk, a back-up disk, and a Teacher's Guide including some student worksheets. The AIR POLLUTION program places the student in the role of an environmental planner whose job it is to control air pollution, specifically carbon monoxide (CO) in "Pollution City." In the introduction the program reviews the effects of CO on humans, U.S. CO Standards, the factors that affect atmospheric CO levels, and the causes and effects of a thermal inversion. A special section entitled Developing a Computer Model clarifies the assumptions, advantages, and limits of computer models while emphasizing the use of safety margins and worse-case analysis. In the Experimental Mode the computer simulates CO levels under various conditions in a large city. The student uses the computer model to develop a plan to reduce CO pollution to acceptable levels. This is done by testing the effect of changing factors that influence city CO levels including number of vehicles, average traffic speed, amount of pollution produced by each vehicle, availability of mass transit, and wind speed. The program concludes with a review quiz.

POTENTIAL USES: This package can be used to show how variables affect air pollution both as a classroom demonstration and individually as enrichment and remediation. It is also a good example of how computer models are used.

ESTIMATED STUDENT TIME REQUIRED: 20-45 minutes

MAJOR STRENGTHS: Very good graphics enhance the package. Excellent structure and follow through are present throughout the program.

OTHER COMMENTS: The program is a very worthwhile purchase.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Approximation, Estimation, & Standard Form

VERSION: Apple, 1981

PRODUCER: PUBLISHER
Scott-Foresman & Co.
Electronic Publishing Division
1900 East Lake Avenue
Glenview, IL 60025

DEVELOPER
Heinemann Computers
22 Bedford Square in Education
London WC1B 3HH

EVALUATION COMPLETED: June 1984 by staff and constituents of Oakland, ISD, Pontiac, Michigan.

COST: $59.95

ABILITY LEVEL: Grades 7 through post-secondary.
SUBJECT: Mathematics
TOPIC: Arithmetic
MEDIUM OF TRANSFER: 5-1/4" disk

REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft, and DOS 3.3
INSTRUCTIONAL PURPOSE: Remedial, standard instruction.
INSTRUCTIONAL TECHNIQUES: Drill & practice, problem solving.
OTHER FEATURES: Content control.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, measuring.
SCIENCE CONCEPTS INVOLVED: Quantification, significance, scale.

DOCUMENTATION AVAILABLE: In program — program operating instructions, teacher's information, student's instructions. In supplementary materials — instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information.

INSTRUCTIONAL OBJECTIVES: (STATED) To stimulate students to think more about numbers and how to manipulate them. To develop skills in estimation.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
●					Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
●					Learning can be generalized.
	●				User support materials are comprehensive.
		●			User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL PREREQUISITES: (STATED) Students should have been introduced to the concepts and methods covered by the programs prior to use.

CONTENT AND STRUCTURE: The package consists of one diskette, a back-up diskette, and a 14-page manual. This material is designed to give a student practice with significant figures, approximation, estimation, and converting from standard form to scientific notation or vice-versa. The computer generates questions to the level of difficulty set by the user, and keeps count of the pupil's score.

POTENTIAL USES: This program could be used for drill and practice with small groups or an individual. It is appropriate for both the math and science classroom at the middle school (advanced student) and high school levels. Students need prior exposure to the topics before using the program.

ESTIMATED STUDENT TIME REQUIRED: Depending on student needs, the program could be used from 10-20 minutes for two to four days or for one class period.

MAJOR STRENGTHS: The program provides excellent drill and practice in a clear, unambiguous manner. The student gets a second chance after a wrong answer before the correct answer is given.

MAJOR WEAKNESSES: The program is very limited in its scope. Drill and practice is not very stimulating. The manual needs better explanations of using the package and what to expect from it. The students also need more experience than the manual suggests. The package might be too hard for some middle school students.

OTHER COMMENTS: It does a good job at what it is attempting to do but its scope is very limited. The topic is really more math-oriented than science. It seems that this disk could be combined with "Scales" by the same producers.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Astronomy: Stars for All Seasons

VERSION: Apple

PRODUCER: Educational Activities, Inc.
P.O. Box 392
Freeport, N.Y. 11520

EVALUATION COMPLETED: June 1984 by the staff and constituents of TIES, Roseville, Minnesota.

COST: $59.00

ABILITY LEVEL: Grades 5 through 12
SUBJECT: Sciences
TOPIC: Astronomy
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II Plus, IIe, or IIe, and TRS-80, Models III and IV, and Commodore 64, single disk drive, and monitor
REQUIRED SOFTWARE: Apple: DOS 3.3, and Applesoft;.TRS-80: TRSDOS
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Tutorial, simulation

SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information, observing, relating time-space.
SCIENCE CONCEPTS INVOLVED: Change, model, order, scale, system, time-space.

DOCUMENTATION AVAILABLE: In program — instructional objectives, program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, resource/reference information, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) Upon completion of the program, students will have learned why the stars appear to move, how latitude and longitude measure a star's position, how stars compare in magnitude, and a visual recognition of some of the constellations in the Northern Hemisphere.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
				●	Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
				●	Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL PREREQUISITES: (STATED) Students need a fifth grade reading level.

CONTENT AND STRUCTURE: This program allows users to view easily observed constellations as they would be seen from any latitude in the Northern Hemisphere and to observe seasonal changes of the constellations by viewing monthly sky maps of a particular latitude. Users can call any single constellation of the 34 presented in the program and observe it "close up." A tutorial section provides a graphic explanation of why we see different stars at different latitudes and at different times of the year. An astronomical chart provides information on each star including magnitude, declination, right ascension, and light years from Earth. No prior knowledge of astronomy is needed to operate or understand this program.

POTENTIAL USES: Reviewers felt the program would be useful in a variety of settings. It could be used as an individual tutorial, review or introduction to Astronomy. It would be excellent for classroom demonstration if displayed with a large screen or monitor.

ESTIMATED STUDENT TIME REQUIRED: The introduction requires 15 minutes and can be repeated. The length of time for parts 2 and 3 depend upon the student and the number of skies he/she chooses to view. One class period of 50 minutes for all three parts would be the minimum.

MAJOR STRENGTHS: Reviewers liked the introduction, because it provides a review, and an introduction or reinforcement of the terminology used in part 2 and 3. The student controls the pace of the program with the option of backing up to a previous section and skipping a section. The program can be used over a period of time by the same student. Students can skip the introduction and go directly to part 2 and 3.

MAJOR WEAKNESSES: In part 2, the student must proceed through all constellations found, and can not back up or quit. In part 3, when viewing the individual stars, it would be helpful to have the name of the constellation on the screen.

OTHER COMMENTS: A list of latitudes and longitudes in the documentation and/or on the disk of major cities would be helpful.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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This report made possible by a grant from SOHIO Corporate Contributions.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE courseware.

AtariLab

VERSION: Atari, 1984

PRODUCER:
Atari, Inc.
1399 Moffett Park Dr.
P.O. Box 3427
Sunnyvale, CA 94088

EVALUATION COMPLETED: June 1984 by staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $99.00

ABILITY LEVEL: Grades 4 through post-secondary.
SUBJECT: Science
TOPIC: Laboratory Tool
MEDIUM OF TRANSFER: ROM cartridge.
REQUIRED HARDWARE: Atari 800 or 800 XL, monitor, disk drive and printer are optional.
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Laboratory tool, interfacing.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, inferring, hypothesizing, measuring.
SCIENCE CONCEPTS INVOLVED: Quantifying, interaction, replication, system, validation.

DOCUMENTATION AVAILABLE: In program — student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide a tool for exploring the concept of temperature. To provide practice in measuring temperature, and using science processes.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need prior instruction on the concept of temperature.

CONTENT AND STRUCTURE: This package contains a ROM cartridge, an Atarilab interface, a temperature probe, a thermometer, and a 143 page manual. The manual outlines numerous experiments that can be performed with this

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
				●	Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
●					Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

equipment in detail. The manual also provides programming information in both basic and logo to enable the student to use the equipment to create their own experiments.

POTENTIAL USES: This program could be used by a 5th or 6th grade teacher who has "gifted" students who would be willing to study the instruction book prior to use. It could be used by 7th-9th grade general science teachers with students reading at approximate grade level. High school age students would probably best use chapters 2 and 3 after completing chapter 1 as an introduction to the use of the program.

The program is best used in the laboratory setting to conduct experiments requiring analog information about temperature. The support materials detail a number of appropriate experiments. The program could also be used as a large group demonstration tool. It replaces the conventional thermometer with a much more versatile tool.

ESTIMATED STUDENT TIME REQUIRED: The user needs at least one hour to read and understand the instructions in the booklet and the operation of the basic program. Another hour is needed to run each experiment: set up materials, collect data, use the computer and print the final results.

MAJOR STRENGTHS: The program allows a wide range of variables and options. The results are not obvious prior to completing the experiment. The program completes calculations in a much shorter period of time than a student could complete the same calculations with paper and pencil.

Tested as a temperature monitor, this seems to be a better tool than a conventional thermometer. High interest was shown by the test class. This program makes excellent utilization of the computer as a scientific monitoring-measuring device.

The ability to print data on an Epson is a plus. Students can also save their data to a disk.

MAJOR WEAKNESSES: The program requires that the students have the ability to read and understand directions as printed in the instruction booklet. The program on the computer does the calculations and graphics but does not explain how and why - this comes from the booklet. Students who do not read and comprehend at grade level may have problems understanding what they are doing and the significance of the results.

The explanation of the basic principles is not stressed enough. The temperature probe wire is too short (6 feet would be better). As tested, it does not represent the most fascinating area of science.

OTHER COMMENTS: The program is good for what it is intended to do. It does not teach any science - it simply makes the calculations and graphics and, from these results, the student has to learn the scientific concepts.

The package has many possibilities in reference to science fair projects. A science fair experimentation guide would be a worthwhile addition. Other kinds of continuous monitoring ideas: barometric pressure, wind speed, wind direction, sunlight duration-intensity, humidity and event recording.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate **SCIENCE** *courseware*

Baffles

VERSION: Apple

PRODUCER: Conduit
The University of Iowa,
Oakdale Campus
Iowa City, IA. 52244

EVALUATION COMPLETED: July 1984 by staff and constituents of Area Cooperative Educational Services, Hamden, Commecticut and Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $50.00

ABILITY LEVEL: Grades 8 through post-secondary.
SUBJECT: Science, Math
TOPIC: Reasoning
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive,and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Enrichment.
INSTRUCTIONAL TECHNIQUES: Game, problem solving.

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Interaction, cause-effect, invariance, model, system.

DOCUMENTATION AVAILABLE: In program — program operating instructions, teacher's information, student's instruction. In supplementary materials — suggested grade/ability level, instrumental objectives, sample program output, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To help students develop their deductive reasoning and problem solving skills.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need some prior knowledge on the concept of co-ordinate graphing.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
				●	Content is accurate.
				●	Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
				●	Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package consists of one diskette and a user's guide. BAFFLES is a simple interactive game designed to challenge a student's problem-solving skills. To be successful at playing the game, students must use some form of scientific inquiry; that is, they must discover systematic, economic procedures for formulating, testing, and confirming hypotheses consistent with observations made during the game. The program thus helps students develop their ability to reason deductively.

BAFFLES is appropriate for science and math classes from the high school to college levels (particularly for units in logical problem solving) and may be presented in conjunction with lectures or as a laboratory exercise. Methods of scientific inquiry may be discussed before using the program, although students can also play the game without previous discussion. The User's Notes included with the program provide step-by-step procedures for game play, in addition to an explanation of how BAFFLES exemplifies scientific problem solving.

POTENTIAL USES: This package could be used to introduce the concept of reasoning in a math or science classroom. It could be used individually or in small groups, or as a contest tool between small groups.

ESTIMATED STUDENT TIME REQUIRED: 1-2 class periods.

MAJOR STRENGTHS: This is a good activity to develop deductive reasoning skills. The program is challenging but motivating for it has a high success rate. It is an excellent example of the scientific process. The student proposes a hypothesis and then is given plenty of opportunities to test it. There are several levels of difficulty. A user support phone number is also included.

MAJOR WEAKNESSES: The program does not take the concept of deductive reasoning and apply it to a concrete situation or discuss any applications. The program is totally abstract in this respect. It would be nice to have a "help" section for students having problems.

OTHER COMMENTS: This program may be helpful in expanding the spacial relationships skills in girls, as well as a way to deal with the basic concept of cause and effect in a simplified form.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Biomes and Food Webs

VERSION: Apple

PRODUCER: Yaker Environmental Systems, Inc.
P.O. Box 18
Stanton, NJ 08885

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $39.00

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Science
TOPIC: Wildlife
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe IIc, single disk drive, and monitor. Also available for the IBM-PC.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, problem solving.

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, decision making, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Quantification, interaction.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — Suggested grade/ability level, prerequisite skills/activities, program operating instructions, teacher's information, resource/reference information.

INSTRUCTIONAL OBJECTIVES: (STATED) This series is designed to instruct students of the wildlife concepts of Biomes (and aquatic ecosystems) and their Food Webs.

INSTRUCTIONAL PREREQUISITES: (STATED) It is recommended that the students be familiar with the following terms: Ecosystem, Food Chain, Food Web, Diversity and Producer.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
			●		Purpose of package is well defined.
			●		Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
			●		Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would not use or recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package consists of one diskette and a documentation booklet. In the program, each biome described requires the student to graphically construct a Food Web. The student is forced to visualize the interrelationships of the food web to its Biome or Aquatic Ecosystem. Also included are man's influences on food webs using Acid Rain, Toxic Wastes, Pesticides and Radioactivity.

POTENTIAL USES: This program could be used as a lesson to impart information about biomes and foodwebs or as a review of the concepts. It could be used by individuals or small groups.

ESTIMATED STUDENT TIME REQUIRED: 20-60 minutes.

MAJOR STRENGTHS: A lot of information is contained in the program and it is in a well organized format.

MAJOR WEAKNESSES: The documentation is very poor and too brief. No behavioral objectives, goals, lesson plans, pre or post activities, or general teacher information is included. The presentation is all in the text mode and is very factual, as a result does not maintain student interest. The student responses are limited to multiple choice. There is no use of graphics (except for the title page) and very limited use of branching.

OTHER COMMENTS: The topic is interesting and relevant.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE courseware.

Body Systems

VERSION: Commodore 64

PRODUCER: Micro Ed, Inc.
P.O. Box 444005
Eden Prarie, MN 55344

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $34.95

ABILITY LEVEL: Grades 5 through 9
SUBJECT: Science, Health
TOPIC: Body Systems
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Commodore 64, single disk drive, and monitor.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, game.
SCIENCE PROCESSES INVOLVED: Acquiring information.
SCIENCE CONCEPTS INVOLVED: Organism, perception, quantification.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information.

INSTRUCTIONAL OBJECTIVES: (STATED) To introduce the principles of circulation, digestion, reproduction, excretion and respiration.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need some prior knowledge of the four major body systems.

CONTENT AND STRUCTURE: This package consists of one diskette and a documentation sheet. The heart and blood, excretion, digestion, and respiration are the four body systems that are covered in this package. BLOOD BANK, EXPLORER'S DIGEST, SECOND WIND, and SUNNYSIDE-UP are the names of the programs.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3 Instructional Characteristics - 2, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The learner will be asked, at random, a series of questions in each of these programs. S/he will be given different options in each of the programs to attain a certain goal. For instance, the learner may be running a blood bank in search of donors or helping Lewis and Clark on their expedition to the Pacific. S/he may also be trying to break the four minute mile or trying to be a successful egg farmer.

This package of four programs is not a series, each program was developed independently.

POTENTIAL USES: This package could be used as a review of the four body systems in the grades 5 through 9.

ESTIMATED STUDENT TIME REQUIRED: Each of the four activities would take about 20-40 minutes.

MAJOR STRENGTHS: Reviewers felt the specified target area of grades 5-9 was very appropriate for the package.

MAJOR WEAKNESSES: The program focused on reviewing information rather than acquiring information. If the user asks for information, which is never sequentially related to the question at hand, they are penalized. This feature is not very motivating. The support materials are very limited and inadequate. The objectives are very broad for each section while the questions are very specific.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Cause and Effect

VERSION: Apple

PRODUCER: Marshware/Marshfilm
P.O. Box 8082
Shawnee Mission, KS 66208

EVALUATION COMPLETED: July 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $39.95

ABILITY LEVEL: Grades 3 through post-secondary.
SUBJECT: Science, Math
TOPIC: Problem solving
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and color monitor is desirable
REQUIRED SOFTWARE: Applesoft, DOS 3.3.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Game, problem solving.

SCIENCE PROCESSES INVOLVED: Hypothesizing, inferring, observing, practicing.
SCIENCE CONCEPTS INVOLVED: Cause-effect, change, force, model.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary program — suggested grade/ability level, program operating instructions, teacher's information, resource/reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To introduce inductive and deductive reasoning skills.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students should have some understanding of inductive and deductive reasoning.

CONTENT AND STRUCTURE: INDUCTO and DEDUCTO are imaginary planets in another universe. The creatures living on these planets are flat and easy to identify. There are

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
●					Science processes well integrated into package.
				●	Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
	●	●			Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
●					Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 4, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

"curved line creatures" like circles and ovals. There are "straight line creatures" like squares and triangles. Strange "FORCES" can change these creatures.

The game format of the Cause and Effect disk features the "FORCE" to illustrate the differences between inductive and deductive reasoning skills. It introduces new problem-solving tools which students can use in their everyday lives.

The package includes one diskette and a documentation booklet.

POTENTIAL USES: This program could be integrated into a presentation of the scientific method, problem solving, perception, or a reasoning and logic unit.

ESTIMATED STUDENT TIME REQUIRED: 1-4 class periods.

MAJOR STRENGTHS: The program is extremely flexible due to the fact that there are many options including levels of play, numbers of forces, point options, etc. The purpose to practice inductive and deductive reasoning is well defined and achieves its purpose in a fun way. The comparisons of these reasoning processes are well done. The instructions given to the user throughout the program are very clear and direct.

MAJOR WEAKNESSES: When repeated mistakes are made, nothing comes up in the program to "Help" you. The program itself isolates the use of inductive and deductive reasoning from the real world. An example of a generalized use of inductive reasoning in given in the manual but not in the program. Most students in grades 3 through 6 would have difficulty with this program and would need help from the teacher.

OTHER COMMENTS: Quicker and more accurate decisions can be made if a tally of outcomes is kept.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Cell Growth and Mitosis

VERSION: IBM

PRODUCER: Classroom Consortia Media, Inc.
57 Bay Street
Staten Island, NY 10301

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $69.95

ABILITY LEVEL: Grades 5 through post-secondary.
SUBJECT: Science
TOPIC: Living systems
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 128K IBM PC with RGB monitor, or PCjr with composit monitor. A printer is optional. Versions are available for both a dual-sided disk drive or two single-sided disk drives.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Simulation, laboratory tool.
OTHER FEATURES: Assessment.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information.
SCIENCE CONCEPTS INVOLVED: Organism, change system, cause-effect, validation.

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, post-test, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To explore the study of living systems. Detailed objectives are included in the documentation.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The students must have a general science background.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package includes one diskette and a comprehensive Teacher's Guide. It is designed for any science curriculum that includes study of living systems. Color graphics show the detailed process of cell division, beginning with a thorough analysis of why a cell divides. Interactive simulations illustrate surface area/volume ratio, chromosome number, chromosome replication, and cytoplasmic division. Students analyze and interpret graphs as an integral part of the learning process. Topics include: Surface Area/Volume of Cells, Experimenting with the Size of Cells, Chromosomes in Cell Division, and Stages of Mitosis.

POTENTIAL USES: This program could be used in a high school biology class. The two sections could be used as an introduction to mitosis. The last two sections might be best used as reinforcement to the topic.

ESTIMATED STUDENT TIME REQUIRED: 1-2 class periods.

MAJOR STRENGTHS: The program fits a real need, for the topic is important as well as difficult to understand. The program will not go on to new information until the student has answered enough questions on the old information correctly. It allows students to set up the process of cell division in the order thought to be correct and then observe those processes in that order. The use of graphics is outstanding. They enhance the program through instruction and illustrations.

MAJOR WEAKNESSES: Because of the use of ratios in the program, students below the ninth grade would probably find the program very difficult. The program is very linear with limited looping and branching. Some of the multiple choice questions can be answered from grammatical form instead of by content. In some sections questions are asked before or without the concept being presented.

OTHER COMMENTS: Because of the animation and careful methodical presentation of complex cell processes, this program gives the teacher a way to display and present information better than by using a book or pictures.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Characteristics of a Scientist

VERSION: Copyright 1983 - Apple

PRODUCER: Cygnus Software
8002 E. Culver
Mesa, Arizona 85207

EVALUATION COMPLETED: June 1984 by the staff and constituents of TIES, Roseville, Minnesota.

COST: $39.00

ABILITY LEVEL: Grades 7 through 12
SUBJECT: Sciences
TOPIC: Problem Solving, Process
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II or II+, IIe, or IIc, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Tutorial
SCIENCE PROCESSES INVOLVED: Hypothesizing, inferring, interpreting data, observance.

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — suggested grade/ability level, program operating instructions, teacher's information, resource/reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To introduce the four basic characteristics of a scientist. To dispell the Hollywood stereotype of the scientist.

CONTENT AND STRUCTURE: This package provides an introduction to the methods of a scientist. It shows how curiosity, observation, skepticism, and open-mindedness enable the scientist to obtain information and arrive at the correct conclusion. The student is given the opportunity to put the characteristics into practice through a series of puzzles, quizzes, observations, and tricks played by the computer. It utilizes high resolution color graphics and a questioning technique.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
			●		Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
			●		User support materials are comprehensive.
			●		User support materials are effective.
				●	Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable when compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, model, perception, theory, validation.

POTENTIAL USES: The program could be used as an introduction at the junior or senior high level.

ESTIMATED STUDENT TIME REQUIRED: One class period of 45-60 minutes.

MAJOR STRENGTHS: The program is very interesting and motivational.

MAJOR WEAKNESSES: Reviewers felt the readability level of the program is too high. There is too much reading on many of the screens. Some sex stereotyping existed in the program. For example, programmers and farmers are referred to as he throughout. It also refers to he/his in the quiz questions. There are several minor technical changes needed. The user support materials are poor.

OTHER COMMENTS: Garbage appears on the screen after "Chicken/Fox/Grain" puzzle. The program asks if you can guess the answer to the "Beaver puzzle", however input is not accepted. The screen scrolls on the "Quote from the Bible" section and also on the quiz. In many places the print appears on the screen slowly, as if typed. This breaks the comprehension and slows reading. It would be best if the print came on all at once. The program throws you into Basic at the end. It would be more classroom usable if the program ask the user if he/she would like to go back to reivew a section or to start over and let someone else use the program.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Chemaid

VERSION: Apple

PRODUCER: Ventura Educational Systems
3440 Brokenhill Street
Newbury Park, CA 91320

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $39.95

ABILITY LEVEL: Grades 7 through postsecondary.
SUBJECT: Science
TOPIC: Chemistry, physical science
MEDIUM OF TRANSFER: 5 1/4 in. disk.
REQUIRED HARDWARE: Apple II Family, 1 disk drive, monitor (color prefered).
REQUIRED SOFTWARE: Applesoft Basic, DOS 3.3.
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, game, and information retrieval.

SCIENCE PROCESSES INVOLVED: Classifying
SCIENCE CONCEPTS INVOLVED: Fundamental entities.
DOCUMENTATION AVAILABLE: In program - Teacher's information, instructional objectives, student's instructions. In supplementary material - Suggested grade/ability level, program operating instructions, teacher's information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: INFERRED - To provide drill and practice in identifying and spelling the names of elements in the periodic table.

INSTRUCTIONAL PREREQUISITES: INFERRED - Prior instruction on the periodic table.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package contains one disk and a Users Guide. The CHEMAID learning system presents the elements of the periodic table according to their symbol, classification, and position on the chart. The system includes an Element Recognition Game and a Data Retrieval Utility. Color graphics enhance the program, which also includes basic facts about each of the elements, such as the atomic number, atomic structure, uses and characteristics of the element. A Teacher's Guide section includes lesson plans, and student worksheets.

POTENTIAL USES: This package provides drill and practice for physical properties of elements, and their symbols. It can be used by individuals or small groups.

ESTIMATED STUDENT TIME REQUIRED: 15 - 20 minutes at a time for two to three days.

MAJOR STRENGTHS: The immediate availability of physical property information is valuable.

MAJOR WEAKNESSES: The target audience is too low, the package is appropriate for 9th grade and above. It contains very little information which is not available in other ways. Some symbols are in all capitals, some in upper and lower case. The on-screen instructions are inadequate; many operating commands must be memorized. The program is slow to respond in places.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE courseware.

Chemical Element Game

VERSION: Apple

PRODUCER: PUBLISHER
Scott-Foresman & Co.
Electronic Publishing Division
1900 East Lake Avenue
Glenview, IL 60025

DEVELOPER
Longman Group Limited
Longman Resources Unit
33-35 Tanner Row
York, England Y01 1JP

EVALUATION COMPLETED: June 1984 by staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $59.95

ABILITY LEVEL: Grades 6 through post-secondary.
SUBJECT: Science
TOPIC: Chemistry
MEDIUM OF TRANSFER: 5-1/4" disk

REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Remedial, enrichment.
INSTRUCTIONAL TECHNIQUES: Game.
OTHER FEATURES: Content control.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method.
SCIENCE CONCEPTS INVOLVED: Cause-effect, invariance, probability, replication, validation.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, teacher's information, student's worksheets.

INSTRUCTIONAL OBJECTIVES: (STATED) To reinforce student's knowledge of some properties of the elements and their compounds, and of trends in the periodic table.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
●					Learning can be generalized.
	●				User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students must have been introduced to the elements, periodic table, and properties of the elements included in the game.

CONTENT AND STRUCTURE: The package consists of two diskettes, a manual and student leaflets.

Each student, or group of students, is allocated a mystery element randomly chosen by the computer from a total of 34 elements. The student is told the appearance of the element under normal room conditions. The task is to identify the element using the least amount of information. Information is supplied by tests performed on the element.

The student leaflets describe the task, the procedure, the scoring, and also lists the tests available. In general, the cost of obtaining information increases as the test becomes more discriminating. The cost of an incorrect attempt at identification is high, to discourage guessing. If the student requests the identity of the element (by typing GIVE UP in response to the prompt 'Option?') his score is reduced to zero.

If a student's score falls below zero the game is automatically terminated and the identity of the element is revealed. No limit has been placed on the number of elements the student may attempt to identify; this decision is left to the teacher or the student. The same element will not occur twice in any series of ten elements.

POTENTIAL USES: It should be used as a review of descriptive chemistry and periodicity. The game format stimulates the memorization of facts which can be used to identify the element in question. The competition could be between groups of students, between two students or a student competing against his/her previous performance. Since communication is only through text on the screen, the students must be close enough to the computer screen to read easily.

Individual students may work with the program as reinforcement or make-up. Small groups (2-3 students) could use this in a laboratory setting. Especially viable for Chemisty I students in grades 10-12 but could be used for 8th and 9th graders (advanced students) with special instructions.

ESTIMATED STUDENT TIME REQUIRED: The student could benefit from as little as 20 minutes of use or as much as one hour per day for a week.

MAJOR STRENGTHS: The student control of tests performed on the unknowm is important. Student guesses are augmented by an excellent list of the properties of the elements. Each test the student chooses to "do", cost him/her points as does each wrong guess. Therefore each interaction is either rewarded or penalized. The student may work from memory of the properties of the elements or be given the chart of properties with which to work.

The game format stimulates the student to learn the properties of the elements. By playing the game, the process of identification is emphasized. The usefulness of the concept of periodicity is evident in the reasoning process required for success. The results of each test are clearly stated and kept in view throughout the analysis.

MAJOR WEAKNESSES: There is no use of graphics or lab simulations relevant to the tests conducted - only the test results are stated. Therefore, if a student has not conducted the actual tests, the results must often seem abstract and in a void. A student must come to the program with quite a bit of descriptive background and an understanding of the periodic chart. Although excellent for review, this program is not the place to begin learning chemical properties and periodicity.

The elements are not randomly selected - i.e. Mercury is always first followed by Beryllium, etc. This means that the effectiveness of the program is greatly diminished. In a class, all students would be working on the same "unknown" and, after working on the program one day, would return to the same beginning unknowns the next.

OTHER COMMENTS: The unknowns must be randomly generated so that the student does not learn the sequence of the unknown.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Classification

VERSION: Apple, copyright 1984

PRODUCER: MECC
3490 Lexington Avenue North
St. Paul, MN. 55112

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $36.00

ABILITY LEVEL: Grades 6 through 9
SUBJECT: Sciences
TOPIC: Biology, Life Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Problem solving, database
OTHER FEATURES: Content control
SCIENCE PROCESSES INVOLVED: Organizing information, clarifying

SCIENCE CONCEPTS INVOLVED: Populations, validation
DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, post-test, teacher's information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To identify the basis for classifying objects and to place objects into their respective groups based on a common characteristic.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
		●			Package achieves defined purpose.
				●	Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
				●	Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
				●	Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
		●			User support materials are effective.
		●			Package components are durable.
		●			Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be unreasonable compared to its instructional value.

Evaluators indicated that they would not use or recommend use of this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 1.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.
Permission to reproduce this document is hereby granted.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package contains a users disk, backup disks, and a 48-page teacher's guide. Classification is an important process in science because it aids in organizing and making sense out of large bodies of information. As the amount of information increases, our ability to handle it effectively decreases. Fortunately, however, computers can greatly aid our use of such information. This module uses a simple database inquiry system to enter, search, and sort data. Both the process and results of this activity are closely related to the process of scientific classification. This two-lesson module includes handouts, transparencies, and a quiz.

POTENTIAL USE: This package is one of a series of three programs designed to integrate computer literacy topics into science. The package focuses more on data base vocabulary and function than on classification. It is useful where a teacher desires instruction or practice at grouping and organizing related information. The two-lesson module is designed for individual or small group use of the computer. The teacher's manual provides suggestions for when computer availability is limited.

ESTIMATED STUDENT TIME REQUIRED: 2-3 class period.

MAJOR STRENGTHS: This is a good program for exploring data base organization and function. The very thorough set of support activities, handout masters, and worksheets is well designed and useful. An information organizing activity that contrasts the efficiency of file cards to that of a computer data base is effective. The program is not limited to life science. New data bases can be created that apply to any content area. The skills of data base use are useful for any topic, in an information age.

MAJOR WEAKNESSES: The program fails to live up to its name, CLASSIFICATION. Worksheet activities focus on data base use and do not emphasize classification processes sufficiently. The on-screen instructions for certain data base functions are complicated and many 6th-9th grade users will require more explanation than provided in the support materials. Reading level on handouts is above the target age group. In some cases too many new terms are presented in one paragraph and then the newly introduced vocabulary is not used consistantly in subsequent text.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate **SCIENCE** *courseware.*

Classification of Living Things

VERSION: Apple, 1983

PRODUCER: Educational Activities, Inc.
P.O. Box 392
Freeport, NY 11520

EVALUATION COMPLETED: June 1984 by staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $59.00

ABILITY LEVEL: Grades 7 through 10.
SUBJECT: Biology
TOPIC: Classification
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and color monitor. Also available for the Commodore 64.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Tutorial.
OTHER FEATURES: Reporting function.

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting data, classifying.
SCIENCE CONCEPTS INVOLVED: Model, organizing, population, theory.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, resource/reference information, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) Students will gain an understanding of: the need for and the value of organization, why biologists classify living things, how the ancients classified, Binomial Nomenclature and the concept of "species", the Modern System of Classification and its 5 Kingdoms, and the evolutionary trend that is found in a phylogenetic tree.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
●					Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL PREREQUISITES: (STATED) Students need to be at a reading level of 5th grade or better.

CONTENT AND STRUCTURE: The package consists of one diskette and a manual, along with answer keys for the four quizzes in the program. The program teaches, through an interactive tutorial, the historical background and development of the modern, five kingdom system of classification of living things. A glossary, classification bank, Dichotomous key and four quizzes are part of the program.

POTENTIAL USES: The program is designed for grades 7 through 10 and can be used as a tutorial to teach new material or review content already covered. The program is probably best suited for 9th and 10th grade Biology, particularuly parts 3 and 4 because of the difficulty of the vocabulary. Parts 1 and 2 would be a good introduction at the lower grade levels (7th and 8th grade Life Science). The introduction to the dichotomous key is a good stepping stone for the teacher to introduce other, more specific keys in follow-up activities.

Although some information is provided in Section 4, the package could be most effectively employed if characteristics of each subdivision were presented in the documentation. Otherwise, it must be used in conjunction with classroom instruction. It would be difficult to use this software as a class demonstration tool.

ESTIMATED STUDENT TIME REQUIRED: The first two parts of the program take about 15-25 minutes. The remaining sections could be used to classify organisms as requested by the instructor or to identify specific characteristics of a particular group of organisms. Time would vary considerably up to one class period.

MAJOR STRENGTHS: The program has nice graphics and they are used effectively. The worksheets included with the User Guide are adequate and the presentation is logical and generally quite clear. The review quizzes are appropriately spaced and the scoring program allows the instructor to see a student's progress. The introduction to the dichotomous key at two levels is well thought-out. Kids liked the use of mnemonic devices to remember the classification sequence but said it gets "kind of" boring. Hints are given to incorrect responses on the learning activities and the information presented is summarized and reviewed. The package is easy to use and the documentation provides suggestions for pre- and follow-up activities. Each unit is nicely branched.

MAJOR WEAKNESSES: The definition of species should be changed to include: share a common gene pool; can produce viable offspring; geographically or physically isolated. These are important concepts in Biology of Species formation.

The program should give examples of hypothesizing rather than letting questions be answered by guesses. The quiz questions are too easy.

Part 4 includes misspelled words: spirocles and annids. Examples given in the section "What's in a Name?" fly by too quickly for a slow reader and cannot be user-controlled. The organisms listed as examples in the dichotomous key should be listed in the user materials so the teacher could easily assign organisms from the classification bank. The Genus/Species boxes were confusing. The frames with the branching kingdom to three phyla and the relationship of classes to one phyllum were unclear.

The documentation does not indicate that color is required. The program cannot be used with a green screen monitor. The presentation is uneven, it leaps from overly simplistic introduction to drill and practice on genus and species. The program presents an overabundance of information in an inconsistent manner. Users are not advised where to get more information on performing searches.

OTHER COMMENTS: The information presented in this package could be more effectively taught with other media. Suggested changes: accommodate green screen monitors, clarify presentation, and define the terms before giving drill and practice on them. Incorrect grammatical use - phrases such as "Animal are" and "Plant are" rather than "Animals are", etc. need to be changed.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Climate

VERSION: Apple 1981

PRODUCER: PUBLISHER
Scott-Foresman & Co.
Electronic Publishing Division
1900 East Lake Avenue
Glenview, IL 60025

DEVELOPER
Heinemann Computers in Education Ltd.
22 Bedford Square
London WC1B 3HH

EVALUATION COMPLETED: June 1984 by staff and constituents of Oakland, ISD, Pontiac, Michigan.

COST: $59.95

ABILITY LEVEL: Grades 7 through post-secondary.
SUBJECT: Earth Science
TOPIC: Climate
MEDIUM OF TRANSFER: 5-1/4" disk

REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting informaton, inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Quanitification; validation.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, prerequisite skills/activities, sample program output, program operating instructions, teacher's information.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide students with practice in interpreting data on world climates.

INSTRUCTIONAL PREREQUISITES: (STATED) Students should have prior instruction in concepts of climate covered in the programs.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: The package consists of one program diskette, a back-up diskette, and a 12-page manual. Data on climatic conditions are presented and students are guided by multiple-choice questions through a step-by-step analysis process. Data is randomly generated within set limits and help is available to the user. Teachers may control data parameters.

POTENTIAL USES: This package is probably best used at the end of a unit as a drill and practice program. It is not designed to start a unit because it will lead to a great deal of trial and error responses. With a printer, it could be used to test a students understanding of the topic, and cut down on trial and error guesses to questions.

The program could be used individually to see graph and data table interpretation. It has some potential for a demonstration for the entire class.

ESTIMATED STUDENT TIME REQUIRED: A complete run of the program would take between 10 to 20 minutes if used after the concepts have been learned.

MAJOR STRENGTHS: Each run of the program can use a different set of variables and is thus better than a printed exercise. It allows for various levels of difficulty and makes good use of graphics.

MAJOR WEAKNESSES: As a drill and practice exercise, the objectives of the program could also be accomplished with a printed page. If student time is not controlled, the program could be completed with only trial and error responses. Notes for the teachers are not complete or detailed enough.

The list of climate types is the British version and does not match ours. The feedback on answers does not clearly discriminate between a correct and incorrect response. If the response is incorrect, the user can get caught in loop until he/she exhausts every possibility.

OTHER COMMENTS: Students should not be given this program to run without detailed instruction of objectives and procedures. The program should be used to demonstrate relationships of climate variable only after the students understand the basic concepts.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

COMP-U-SOLVE

VERSION: Apple

PRODUCER: Educational Activities
P.O. Box 392
Freeport, NY 11520

EVALUATION COMPLETED: June 1984 by staff and constituents of Jefferson County Public Schools, Lakewood, Colorado.

COST: $109.00 or $59.00 each

ABILITY LEVEL: Grades 2 through 12
SUBJECT: Math-Science
TOPIC: Problem Solving
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, or IIe, single disk drive, and color monitor. Also available for TRS-80 Models III and IV and the Commodore 64.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Enrichment.
INSTRUCTIONAL TECHNIQUES: Game, problem solving.
OTHER FEATURES: Reporting function.

SCIENCE PROCESSES INVOLVED: Interpreting information, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Cause-effect, model, perception, interaction.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, resource/reference information, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) The major objective of COMP-U-SOLVE is to promote and stimulate problem-solving. Some of the problem-solving objectives that are developed by completing COMP-U-SOLVE are: developing trial and error techniques, guessing at solutions (hypothesis testing), reasoning using IF — THEN, reasoning using EITHER — OR, examining different cases, reducing problem to similar problem, finding equivalent problem to solve, using graphing and branching techniques, looking for patterns, organizing data, and working backwards.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
				●	Content is accurate.
				●	Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

INSTRUCTIONAL PREREQUISITES: (STATED) The puzzles do not require any special prerequisite skills. The user who has had some experience with problem-solving techniques will have greater success.

Some techniques that might be discussed prior to working with the puzzles include: the use of trial and error procedures, looking for different alternatives, trying IF-THEN and EITHER-OR reasoning, defining a smaller puzzle of the same type, looking for patterns, organizing data, working backwards, and recording information.

CONTENT AND STRUCTURE: This package consists of 2 diskettes and a documentation manual. COMP-U-SOLVE PROGRAMS are simulations of classical puzzles that test and stretch the thinking capacity of your students as they try to solve the problem in the least possible moves.

Each thought-provoking program offers two levels of play. The Regular Mode provides feedback based on student responses. The computer "knows" if the user is progressing toward a desirable solution in an effective manner. If not, s/he is given feedback such as motivating statements, specific hints, general guidelines and, if necessary, the complete solution. In the Contest Mode, all hints and feedback are eliminated and, if available, a more difficult level of the program is offered.

Each of the 10 games (5 per disk) are graded from easiest to hardest, and uses high resolution graphics, sound and other embellishments to make the games motivating.

POTENTIAL USES: The program could be used with pairs or small groups of students to supplement a unit on logic or problem solving. It is good for extra credit, spare time work, or after school where students can work independently.

ESTIMATED STUDENT TIME REQUIRED: Each puzzle would take from 10 to 30 minutes depending on the puzzle, difficulty level and user experience.

MAJOR STRENGTHS: The manual includes a description of each puzzle and the solutions. The puzzles are interesting to all ages. There are various levels of difficulty to challenge any ability. One reviewer commented that students were "actively" working with the program.

MAJOR WEAKNESSES: The directions are not very clear for some of the puzzles (Align the Laser). When you change puzzles you have to go back to the introduction.

OTHER COMMENTS: A color monitor is necessary.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Computer Biology Lab: Frog

VERSION: Apple

PRODUCER: Cross Educational Software
1802 N Trenton Street
PO Box 1536
Ruston, Louisiana 71270

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Schools in Rockville, Maryland.

COST: $30.00

ABILITY LEVEL: Grades 7 through 10
SUBJECT: Sciences
TOPIC: Biology, Life Science
MEDIUM OF TRANSFER: 5 1/2 in. disk
REQUIRED HARDWARE: Apple II Family, one disk drive, color monitor
REQUIRED SOFTWARE: DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, simulation, laboratory tool, and demonstration.

SCIENCE PROCESSES INVOLVED: Observing
SCIENCE CONCEPTS INVOLVED: Organism

DOCUMENTATION AVAILABLE: In Program — post-test and student's instructions. In supplementary material — instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, pre-test, post-test, teacher's information, student's instructions, and student worksheets.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide a support activity for the frog dissection lab.

INSTRUCTIONAL PREREQUISITES: (STATED) To be used in conjunction with the Frog dissection lab activity. The student should be familiar with proper lab procedures and practices.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low)
Content - 4, Instructional Characteristics - 5, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package contains a circulation disk, a back-up disk, and a 16 page users guide. The program provides a pre/post lab computer activity on frog dissection which identifies the major organs and their functions.

POTENTIAL USES: This package could be used with large groups in a demonstration mode to provide instruction on the dissection process, and the placement and identification of the organs. It would be useful during the lab to assist students having difficulty. After the lab it could be used as review with individual students.

ESTIMATED STUDENT TIME REQUIRED: 1-3 class periods depending on how it is used.

MAJOR STRENGTHS: The package is a good pictorial representation of the dissection process and organ placement.

MAJOR WEAKNESSES: Some labels are difficult to read and associate with proper locations.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Connections

VERSION: Apple

PRODUCER: Krell Software Corporation
1320 Stony Brook Road
Stony Brook, N.Y. 11790

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $99.95

ABILITY LEVEL: Grades 5 through 12
SUBJECT: Science
TOPIC: Reasoning
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, Atari, Commodore Pet and 64, TRS-80, IBM, single disk drive, monitor
REQUIRED SOFTWARE: Apple: Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Problem solving
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, model, perception.

INSTRUCTIONAL OBJECTIVES: (STATED) To teach the art of scientific reasoning, mental agility, and intellectual acuity.

CONTENT AND STRUCTURE: The CONNECTIONS Game System includes four game formats—BIRDS OF A FEATHER, CONNECTIONS, PARTITIONS, and NEWTON. Each is designed to demand as well as to teach the arts of scientific reasoning, mental agility, and intellectual acuity. Players formulate and test their own hypotheses as they seek the relationship that "connects" a set of data.

CONNECTIONS is accompanied by a series of data bases pertaining to different subject areas. The initial set of data bases (included free with the game system) deals with geography, chemistry, mammals, mathematics, tools, and everyday objects.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

This game system allows users to create their own data bases and to utilize the data bases created by others via the CONNECTIONS USERS GROUP EXCHANGE PROGRAM.

POTENTIAL USES: This package could be used for enrichment or remediation exercises for individual or groups of students.

ESTIMATED STUDENT TIME REQUIRED: 30 minutes or more

MAJOR STRENGTHS: The general objective, to provide practice in determining relationships (connections), is excellent. The package is valuable for practicing a skill that is difficult to develop in standard instructional modes. The package is flexible, allowing user created and expanded data bases.

MAJOR WEAKNESSES: The user support materials are inadequate. The basic operating instructions lack details. The description of the database format and logic is too brief. Certain screen instructions are cryptic and misleading. The user must do a lot of trial-and-error exploring to become familiar with the program. Considerable preparation will be necessary to get students using the package as intended.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE courseware.

Discovering the Scientific Method

VERSION: Apple

PRODUCER: Focus Media, Inc.
839 Stewart Avenue
Garden City, NY 11530

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Public Schools in Rockville, Maryland.

COST: $49.00

ABILITY LEVEL: Grades 5 through 12
SUBJECT: Science
TOPIC: Process
MEDIUM OF TRANSFER: 5 1/2 in. disk
REQUIRED HARDWARE: 48K Apple II, II+ or IIe, single disk drive, and monitor. Also available on a 16K TRS-80.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Standard Instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial, problem solving.
SCIENCE PROCESS INVOLVED: Hypothesizing, inferring, interpreting data, observing.

DOCUMENTATION AVAILABLE: In program - student's instructions. In supplementary material - suggested grade/ability level, instructional objectives, sample program output, program operating instructions, teacher's information, student's instructions, student worksheets.

INSTRUCTIONAL OBJECTIVES: (STATED) To define the terms HYPOTHESIS and ANALYSIS, ORGANIZE DATA into simple categories, RECORD the RESULTS of experiments, DRAW CONCLUSIONS from recorded data, and MAKE GENERALIZATIONS from their conclusions.

INSTRUCTIONAL PREREQUISITES: (INFERRED) None stated.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●			●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●	●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●	●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
	●				User support materials are effective.
●					Package components are durable.
	●				Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
	●	●			Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package consists of one diskette, back-up disk, and a Lesson Planner Guide.

The disk contains two educational computer programs that provide a model of scientific inquiry.

The first program in the package is tutorial in nature and introduce the concepts of hypothesis formation and data analysis. Once this is mastered, the student progresses to the second program, which contains three problems. Each problem presents information for the student to "solve" by forming hypotheses, performing tests, and analyzing the results of these tests.

At the end of the TEACHER'S LESSON PLANNER there are a set of student worksheets. The worksheets have been designed to allow the teacher to review each student's work, spot difficulties that he/she may be having, and provide an opportunity to make suggestions that will assist the student in becoming a more critical thinker.

ESTIMATED STUDENT TIME REQUIRED: 45 minutes.

POTENTIAL USES: With individual students or pairs of students as an introduction to or review of the scientific method.

MAJOR STRENGTHS: Modular approach to problem solving.

MAJOR WEAKNESSES: The program can only be used once for each student because the program presents the same problems each time it is used.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Discovery Lab

VERSION: Apple

PRODUCER: MECC
3490 Lexington Avenue North
St. Paul, MN 55112

EVALUATION COMPLETED: October 1984 by the staff and constituents of the Northwest Regional Educational Laboratory.

COST: $44.00

ABILITY LEVEL: Grades 6 through 9
SUBJECT: Sciences Process
TOPIC: Life Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Family, single disk drive and monitor.
REQUIRED SOFTWARE: DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Microworld, problem solving
SCIENCE PROCESSES INVOLVED: Controlling variables, designing experiments, hypothesizing, inferring, observing, predicting

SCIENCE CONCEPTS INVOLVED: Organism, population, and model.

DOCUMENTATION AVAILABLE: In Program — program operating instructions, student's instructions. In Supplementary Material — suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) After using all three levels of this package the student should be able to: identify variables and name suitable controls; design an experiment that controls five variables; collect and record simple data from observations; provide logical predictions and conclusions from data and information; suggest appropriate experiments to solve simple problems; run multiple trials in order to increase the accuracy of experimental results.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
●					Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
●					Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is very reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale 5 (High) to 1 (Low).

Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

INSTRUCTIONAL PREREQUISITES: Reading level of 5-6 (Dale-Chall)

CONTENT AND STRUCTURE: This package contains one disk, a back-up disk, and a 40 page manual. Discovery lab is designed to introduce students to scientific processes: specifically, observation, experimental design, and hypothesis testing. Students are challenged to design experiments in order to determine the characteristics of imaginary mystery organisms. The package contains three separate labs of differing difficulty. As students progress through the labs they must control additional variables and analyze increasingly complex organisms.

Each lab contains five types of organisms and a graphical chamber where the students may design and run their experiments. Students study the characteristics of an organism by altering the conditions (variables) in a chamber. Students learn by testing and observing an organism's behavior under the different conditions.

In "Training Lab" students control two variables, light and temperature. Each of these variables can be set for one of two distinct conditions. The organisms in this lab always display a preference for one of the conditions.

Students working in "Explorer Lab" control five variables. Each variable in this lab can be set for one of two conditions. Most of the organisms in this lab will display a preference for one of the two conditions. In some cases, however, organisms will not have a preference for either of the conditions.

In "Challenge Lab" students control five variables. Each variable in this lab can be set for one of three distinct conditions. Organisms in this lab may display a preference for one condition or they may not exhibit a preference for any of the conditions.

Students may continue to design experiments in a chamber until they are satisfied that they have discovered the behavior patterns of the organisms. The final results are analyzed and compared to the actual characteristics of the organisms. Possible redesigns of the experiments are suggested when the students' findings do not match their organisms' true characteristics.

POTENTIAL USES: This package could be used with individual students or pairs of students in a life science class at the intermediate level. It could also be used with large groups in a demonstration mode.

ESTIMATED STUDENT TIME REQUIRED: Approximately 30 minutes for the "Training Lab". The other two labs would require a longer time to complete, but it can be done in sections over several days. Students would benefit by repeating the labs several times. To do a good job on the advanced labs would require several days to a week.

MAJOR STRENGTHS: "Discovery Lab" is an incredible simulation of science experimentation. The reviewers especially liked the amount of control the student has in simulation. By controling two to five variables the user is able to observe the resulting changes in a fictious organism. The documentation is excellent. All possible outcomes are examined in the manual. The reviewers liked the student worksheets which are provided in the support materials. Use of the program encourages accurate record keeping. One reviewer commented that this package was the best computer package they have seen that simulates the scientific method of problem solving.

MAJOR WEAKNESSES: Each level is limited to five organisms that are not randomized in their behavior. Once these behaviors are discovered the usefulness of the package deminishes.

OTHER COMMENTS: Students may get a little bored while waiting for the organism to "react" to changes in the variables. But, this wait time is realistic. If students jump to conclusions before the organism reacts their results may be inaccurate.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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This report made possible by a grant from SOHIO Corporate Contributions.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Earth Science

VERSION: Atari 2.3

PRODUCER: MECC
3490 Lexington Avenue North
St. Paul, MN 55112

EVALUATION COMPLETED: June 1984 by staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $46.00

ABILITY LEVEL: Grades 5 through 9.
SUBJECT: Sciences
TOPIC: Earch Science
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Atari 400, 800 or XL series, single disk drive and monitor.
REQUIRED SOFTWARE: Atari Basic cartridge.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, simulation, game, problem solving.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information. Inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, change, model, quanitification.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, student's instructions, students worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To calculate the epicenter of an earthquake given lag-time information from three reporting stations. To define the following: seismographs, Richter scale, epicenter, shock waves, primary and secondary waves, lag-time. To recognize those characteristics of minerals that identify a unique mineral. To examine or perform tests on a specific mineral in response to computer prompts. To classify minerals by the criteria each meets or fails. To experience a systematized laboratory process of examining and testing objects for classification. To learn the names of planets. To learn the distances between earth and the planets. To compare distances and various modes and speeds

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
●					Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

of travel. To compare body weight as measured on the planets, moon and sun. To correctly use terminology associated with astronomy. To identify the five major constellations around the North Star. To observe the apparent rotation of the stars by viewing the sky at different time periods.

INSTRUCTIONAL PREREQUISITES: (STATED) Students need to be at a 7-8th grade reading level.

CONTENT AND STRUCTURE: This package includes a user's disk containing five programs on four earth science topics, a back-up disk, and a 53 page support manual.

Solar Distance, Ursa Lesson, and Ursa Rotation cover the astronomy topics of distance in space and the rotation of constellations. EARTHQUAKES and MINERALS instruct students on calculating the distance to an earthquake epicenter and on identifying 29 common minerals.

POTENTIAL USES: The package could be used in physical science, geology or earth science classes. Each of the five programs have a different potential.

Minerals: This program could be used with individuals or small groups after a unit on minerals to reinforce the concepts.

Earthquakes, Solar Distance, and Ursa Rotation: These programs could be used with individuals, small groups, or for large group demonstrations using a large monitor.

Ursa Lessons are appropriate for use with individuals or small groups.

ESTIMATED STUDENT TIME REQUIRED: Earthquakes: 30-90 minutes; Minerals: 15-20 minutes; Ursa (Lesson and Rotations): 1 hour and Solar Distance: 30-60 minutes.

MAJOR STRENGTHS: Earthquake: The sequence as suggested in the support manual leads to comprehension of the concepts at a very high level. It is a very well done simulation.

Minerals: The program is very good - it shows how a computer easily calculates various input and reaches a conclusion rapidly.

Ursa Rotation: This program uses clear graphics to simulate events that cannot be observed during a regular school day. It encourages students to make actual observations of the night sky to confirm the accuracy of the simulation. The package includes a good set of suggested classroom activities. Ursa provides a valuable learning experience for the student without any other materials.

Solar Distance: The program is well done. Distance and weight conversions are done in a clear, easily understood format. It has a high interest level with information provided in real world terms. It can be used with fairly good concept developement with no preparation.

MAJOR WEAKNESSES: Earthquake: Graphics could be sharper and clearer. There was some difficulty observed with overlapping lines and state borderlines (bright red circles might be better). Simulated graphs could be larger and would be better with a scale of intensity. The package does not provide enough information on the causes of earthquakes.

Minerals: This is not a stand-alone program. Much teacher involvement and preparation is necessary for a worthwhile experience. More background on minerals and their characteristics is needed. If used to replace actual work by a student, this program would be a misuse of computer technology.

Ursa Lesson: This program is poor in introduction, design and presentation. The program does not provide enough background on the historical significance of constellation names, and why constellations are used today and in the past as identifiable groupings of stars.

Ursa Lessons and Rotation: Relative brightness (magnitude) of stars in constellations was neither mentioned nor simulated.

Solar Distance: Students should have had a fair amount of astronomy time/distance experience for most effective use.

OTHER COMMENTS: The Ursa lessons should be dropped from the package.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Earth Science Series

VERSION: TRS-80 III/IV Disk, copyright 1980

PRODUCER: TYC Software
2128 W. Jefferson Road
Pittsford, NY 14534

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $68.50

ABILITY LEVEL: Grades 7 through 12
SUBJECT: Sciences
TOPIC: Earth Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K TRS-80 III, single disk drive, and monitor. Also available for 16K TRS-80 Model I and III with cassette recorder.
REQUIRED SOFTWARE: TRS-DOS
INSTRUCTIONAL PURPOSE: Remediation, standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial, simulation, laboratory tool

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, measuring, inferring, hypothesizing, using numbers.
SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, significance, model, validation.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials -- instructional objectives, program operating instructions, teacher's information, student's instructions, student worksheets.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide students with instruction and drill designed to reinforce class material. Specific behavioral objecties are stated in the manual for each of the 12 programs in the package.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The student must have received prior instruction on the concepts covered by each program.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: The package consists of one diskette and a manual. The manual contains general operating instructions, objectives and a description for each of the 12 programs in the package. Also included in the manual are reproducible worksheets and handouts for use with the package, as well as an answer key for all program activities. Programs on the diskette are: Gradient, Heat Energy Lost or Gained, Latitude and Longitude, Basic Chemistry, Stream Erosion, Water Budget, Siesmic Waves, Earth History, Seasons, Meterology, Percent Error, and Lab Aid Program.

POTENTIAL USES: This package is a tutorial program. It is designed for one student doing the package alone.

ESTIMATED STUDENT TIME REQUIRED: 25 minutes per section.

MAJOR STRENGTHS: There is a variety of subjects covered in the program. Good use of graphics enhance the package. There is good reinforcement for the students correct responses.

MAJOR WEAKNESSES: The tutorial information needs to be expanded. Before the students are allowed to continue, they must answer with correct responses without any branching to help screens. This encourages guessing. Typing errors and the use of abbreviations are confusing. The student handouts are of poor quality. The material in the stream erosion program is not presented clearly.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Eat Smart

VERSION: Apple, 1981

PRODUCER: The Pillsbury Company
Pillsbury Center, M.S. 3286
Minneapolis, MN 55402

EVALUATION COMPLETED: July 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $19.75

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Health, Science
TOPIC: Nutrition
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, monitor, single disk drive, and printer (optional).
REQUIRED SOFTWARE: Applesoft, DOS 3.3.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
OTHER FEATURES: Nutritional Analysis
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting data, questioning.

SCIENCE CONCEPTS INVOLVED: Quantification, interacting, cause-effect.

DOCUMENTATION AVAILABLE: In program — Program operating instructions, student's instructions. In supplementary materials — Teacher's information, student worksheets.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide nutritional analysis of the student's diet for one day.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need some prior instruction on the meaning of RDA and some nutrition concepts would be useful in understanding the program output.

CONTENT AND STRUCTURE: The EAT SMART nutrition computer program is an easy-to-use computer program that analyzes an individual's diet for one day. The program was designed to create awareness of key nutrients in the diet and ways individuals can improve their diets by making different food choices.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
●					Content represents current knowledge of subject.
●					Science issues presented objectively.
	●				Content has educational value.
●					Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
				●	Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
		●			Package components are durable.
			●		Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The analysis is given as a percentage of each user's Recommended Dietary Allowances (RDA's) for key nutrients and considers age, sex and special requirements of pregnant or nursing women. (The RDAs established by the National Academy of Sciences, National Research Council, 1980, provide generous amounts of nutrients needed for good health.) Included in the kit are the following: one diskette, program manual and educator's guide, 30 food worksheets, food substitution list, 30 "Learn How to be a Wise Eater" brochures. Several other activity worksheets, and a nutrient compilations book.

POTENTIAL USES: EAT SMART could be used as an introduction or conclusion to a nutrition unit. This package could be used in a classroom demonstration where selected daily diets are entered and displayed to the class for discussion. The program could also be used with individual students. Each student could keep track of their diet for a day and enter it into the computer for analysis. Another possible use if for the class to collect data on the snacks eaten during a day to see how many calories or how much sodium was consumed by the whole class.

ESTIMATED STUDENT TIME REQUIRED: Each student will require approxiamately 30 minutes of computer time to enter their personal data. Additional time would be required to introduce the activity, go over the worksheets, and discuss the additional brochures.

MAJOR STRENGTHS: The nutritional data is accurate and up to date. The program gathers information and gives an analysis of that information. No particular view point or philosophy is presented. Reviewers liked the using of personal data for analysis. There is a tremendous amount of nutritional information in this package available to the user which would otherwise require much research and reading.

MAJOR WEAKNESSES: The program does not take advantage of computer graphics. The entire program is done in the text mode. Although, if you are using a printer to print out the analysis, this will be an asset. The students are required to handle a tremendous amount of unorganized numerical data, after an analysis. The information display format is very poor. The folder which holds the components of the package is not durable.

OTHER COMMENTS: If an entire class of students is to enter their data individually on one computer, it would take a considerable amount of time to complete the rotation.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Energy and Power

VERSION: Commodore 64

PRODUCER: Micro Ed, Inc.
PO Box 444005
Eden Prairie, MN 55344

EVALUATION COMPLETED: October 1984 by the staff and constituents of the Northwest Regional Educational Laboratory.

COST: $34.95

ABILITY LEVEL: Grades 4 through 9
SUBJECT: Science
TOPIC: Physical Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Commodore 64, single disk drive, and monitor
REQUIRED SOFTWARE: None
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, and problem solving.
SCIENCE PROCESSES INVOLVED: Interpreting data.
SCIENCE CONCEPTS INVOLVED: Cause-effect, force, quantification

DOCUMENTATION AVAILABLE: In Program — program operating instructions, student's instructions. In Supplementary Material — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information.

INSTRUCTIONAL OBJECTIVES: (STATED) To introduce the relation of power and mass to moving objects and creating energy.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The student should be familiar with the terms; work, power, energy, watts, foot-pounds, joules, and mass prior to using the package.

CONTENT AND STRUCTURE: This package consists of one diskette and documentation sheet. The programs "Hay Day", "Demolition Derby", "Watts Up", and "River Run" deal with the physical science topics of power and mass.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
		●			Package achieves defined purpose.
	●				Content presentation is clear and logical.
			●		Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
●					Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is not reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made. (Note changes under weaknesses or other comments.)

Summary: Scale 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3 Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The learner will see that work and time are directly related when finding power. Power will be measured by the amount of work done lifting hay bales into a loft. The faster you can get the work done, the more powerful you'll be.

"Demolition Derby" shows how mass can be a very powerful force. The learner will see that it's not always how big something is, but more importantly how much mass is contained within it. In this case, it has to do with demolition derby cars.

Power can also be expressed in a metric unit called a watt. A watt is an electrical measurement which the learner will apply to a conveyor belt. The concepts of time and energy are also included in "Watts Up".

The final program in this series deals with horsepower. You will find the power generated by rivers while developing an understanding of the many different ways one can use and measure power.

POTENTIAL USES: This package could be used with individuals or pairs for drill and practice with the concepts of power and mass.

ESTIMATED STUDENT TIME REQUIRED: Each of the four programs can be done in 10 to 20 minutes depending on the computational speed of the user. The "Watts Up" program requires the use of pencil and paper, and perhaps a calculator. The other programs use values that most students can do mentally.

MAJOR STRENGTHS: These programs show how to calculate values for power, etc. which serves as a good example of applied mathematics. They can be used effectively as math drill problems. The objectives are clearly stated in the program and in the documentation. The graphics used to reward correct answers are very well done. The programs do an excellent job of allowing the user to control the flow of the programs at all steps.

MAJOR WEAKNESSES: The reviewers felt that the user is shown HOW to do the calculations but not WHAT the calculations mean. The package can be seen more as a math drill and practice. Consequently, it may be more useful in a mathematics class than in a science class. The graphics are somewhat misleading in that the distances are shown the same regardless of the dimension. The picture stays the same and only the numbers change. The producer indicates that the package may be used as early as third grade. Most of the programs would be too difficult for that level. Two fatal errors occured in the program "Watts Up".

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Energy House

VERSION: April 1983 - Apple II

PRODUCER: Ties
1925 West County Rd. B2
St. Paul, MN 55113

EVALUATION COMPLETED: June 1984 by the staff and constituents of Program for Research and Evaluation for Public Schools, Mississippi State, Mississippi.

COST: $49.95

ABILITY LEVEL: Grades 4 through 8
SUBJECT: Sciences
TOPIC: Energy
MEDIUM OF TRANSFER: 5-1/4" Flexible Disk
REQUIRED HARDWARE: 48K Apple II+, IIe, or IIc, single disk drive, monitor, printer (optional).
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice, simulation, problem solving
SCIENCE PROCESSES INVOLVED: Problem solving, evaluation of data, observing.

SCIENCE CONCEPTS INVOLVED: Cause-effects, change, interaction, model, system.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To become skilled in locating and correcting energy waste at home.

INSTRUCTIONAL PREREQUISITES: (STATED) Students must be introduced to the energy related commands used by Energy House, and have some knowledge of the common energy wasters in a home.

CONTENT AND STRUCTURE: ENERGY HOUSE is a simulation/problem solving activity in which students will examine rooms or a house to find and correct energy waste. Students travel

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package was judged to be resonable compared to its instructional value.

I would use or recommend use of this package with little or no change.

Summary: Scale form 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

through a house of two to seven rooms looking for ways to conserve energy. After deciding what changes should be made to a room, the student types in commands to correct the problem. If the student's response is correct, the energy efficiency of the house will increase. This increase registers on the thermometer on the screen, which keeps track of the score. However, the percentages given are not true indicators of the amount of energy saved by each correction. At the end of the program, a student's success is stated in terms of energy efficiency. A management system provides the teacher with the student's name, the number of rooms examined, the ending time, and the final energy efficiency rating.

POTENTIAL USES: This package would be beneficial when teaching a unit on energy conservation, in the home, at the upper elementary level. Students could use it independently prior to and following instruction. It can be used for assignment purposes, because it stores a student record.

ESTIMATED STUDENT TIME REQUIRED: 1 to 1-1/2 hours for mastery.

MAJOR STRENGTHS: This program deals with things a student can control at home (i.e. leaving lights, stereo or TV on). It also makes allowances for personal comfort, such as leaving lights or heater on when someone is in the room.

MAJOR WEAKNESSES: The color graphics are not clear, alot of time is spent in attempting to figure out what you are looking at. If the program was used on a B/W monitor, the problem would be worse. This is a major problem and could be very frustrating for students.

OTHER COMMENTS: The program puts a time limit on each student, thus avoiding lengthy sessions. The teacher should demonstrate or explain the graphics prior to student use of the package.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Energy Search

VERSION: Apple

PRODUCER: McGraw Hill
1221 Avenue of the Americas
New York, NY 10020

EVALUATION COMPLETED: March 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $180.00

ABILITY LEVEL: Grades 5 through 9
SUBJECT: Science
TOPIC: Energy Conservation
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II plus, IIe, or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Simulation
OTHER FEATURES: Speed limited
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, replication.

DOCUMENTATION AVAILABLE: In program — Sample program output, teacher's information, student's instructions. In supplementary materials — Suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, sample program output, program operating instructions, post-test, teacher's information, resource/reference information, student's instructions, student worksheets.

INSTRUCTIONAL OBJECTIVES: (STATED) To help students learn the following science-related skills: vocabulary, record-keeping methods, systematic procedure for making decisions, energy information, principles of energy management, and energy needs verses ecology issues.

INSTRUCTIONAL PREREQUISITES: (STATED) Students need to be at a 6th grade reading level and have a knowledge of how to operate a computer.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
			●		Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: In ENERGY SEARCH, your students are directors of an energy factory that is supplying energy to the homes and businesses of the surrounding community. The computer helps them run the factory by keeping track of the areas in the factory that need money and the amount of money being spent. The goal is to keep the factory running smoothly and not allow a shut down to happen. To reach their goal, students make various decisions based on both content information in the Searchbook (student workbook) and changing data from the computer. The process involves reading, interpreting and recording data, and decision making—all basic skills that enhance the study of energy or the study of the history of energy.

POTENTIAL USES: This package is designed for use with a large class setting of students grouped into decision making units of three to four people. The reviewers recommended use with higher ability 5th through 9th graders. Average or below average students would have problems understanding the flow of activities from group to group.

ESTIMATED STUDENT TIME REQUIRED: 1-2 weeks of full class periods.

MAJOR STRENGTHS: The information on various energy sources is well covered and up to date, including the section on solar nuclear power. The program is structured for a class to make use of one computer and provides for constant decision making processes to be carried out while the other students are using the computer.

MAJOR WEAKNESSES: Once a decision has been made it cannot be changed. Students are only allowed to make decisions from a pre-set list if they are to succeed. There is little reference to prior knowledge or experience. The information is for the most part self contained in the program. The graphics and sound are limited or non-existant. Pacing the use of the computer and workbook could be a problem depending on the level of the user group.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Energy Series

VERSION: Apple

PRODUCER: Focus Media, Inc.
839 Stewart Avenue
Garden City, NY 11530

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Public Schools in Rockville, Maryland.

COST: $69.00

ABILITY LEVEL: Grades 7 through 10
SUBJECT: Science
TOPIC: Environmental Education/Energy
MEDIUM OF TRANSFER: 5 1/2 in. disk
REQUIRED HARDWARE: 48K Apple II, II+ or IIe, single disk drive, and monitor. Also available on 48K TRS-80 Model III, 32K PET, and Commodore 64.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial and game.

SCIENCE PROCESSES INVOLVED: Acquiring information
SCIENCE CONCEPTS INVOLVED: Interaction

DOCUMENTATION AVAILABLE: In Program — student's instructions. In supplementary material — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions and follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To improve the students' understanding of heat and sound energy.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need prior knowledge on the topics included in these games.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●	●			The package makes good use of computer time.
	●	●			Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●	●			Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
	●				Teachers can employ package easily.
	●	●			Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree   A-Agree   D-Disagree   SD - Strongly Disagree   NA - Not Applicable

The cost of this package is somewhat reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low)
Content - 4, Instructional Characteristics - 2, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package consists of one diskette, back-up disk, and a Lesson Planner Guide. It includes two reinforcement programs dealing with the world of heat and sound energy. In the program 'Heat Energy and Temperature' two students answer questions and receive snowballs as rewards. Once the questions are completed they play Snow Castle in which they use their accumulated snowballs to knock down the opponents wall. The topics include heat and temperature, conduction, convection, radiation, and calories. 'Sound Energy and Waves' is a game where students try for the privilege of becoming a sharpshooter. The topic includes sound waves, pitch, amplitude, echoes, speed of sound, and music. In both programs incorrect answers result in tutorial information.

POTENTIAL USES: With pairs of students as a review of heat/energy information.

ESTIMATED STUDENT TIME REQUIRED: 45 minutes.

MAJOR STRENGTHS: The games contain a good set of questions to review heat/energy concepts. When a question is missed the program provides a good tutorial on the topic.

MAJOR WEAKNESSES: None stated.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Experiments in Human Physiology

VERSION: Apple

PRODUCER: HRM Software
175 Tompkins Avenue
Pleasantville, NY 10570

EVALUATION COMPLETED: March 1984 by the staff and constituents of Total Information Education System, Roseville, Minnesota.

COST: $249.00

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Physiology (Human)
TOPIC: Respiration, Circulation
MEDIUM OF TRANSFER: 5-1/4" disk.
REQUIRED HARDWARE: Apple II or II plus single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Enrichment
INSTRUCTIONAL TECHNIQUES: Problem solving
OTHER FEATURES: Interfacing.
SCIENCE PROCESSES INVOLVED: Controlling variables, designing experiments, collecting data, interpreting data, measuring, questioning.
SCIENCE CONCEPTS INVOLVED: Cause-effect, change, interaction, perception, probability, quantification, significance, validation.

DOCUMENTATION AVAILABLE: In supplementary materials — suggested grade/ability level(s), instructional objectives, prerequisite skills or activities, program operating instructions, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To make physiological measurements and experiments on: Response time, Calibration, Skin temperature, Respiration rate measurement, and Heart rate measurement.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Minimal teacher preparation is necessary for each of the above topics.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
				●	Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
				●	Learner controls rate and sequence.
				●	Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package was judged to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: The package includes hardware and software needed to complete the ten experiments on human physiology. The hardware includes: interface box to connect to Apple's game paddle port, temperature probes, a timer plug, a light and light sensor and four extender cables. In the program students make physiological measurements on response time, skin temperature, respiration rate, and heart rate. The software allows students to collect and store data automatically in each area. In recording the same event over a period of time, students can use the computer to prepare averages and create graphs of physical behavior.

A 75-page teacher's guide includes instructions for experiments, suggestions for further activities and student data sheets for recording results.

POTENTIAL USES: This package could be used for enrichment. On going physiology experiments could be accomplished by having students cycle through the station in small groups. The package could be used as a class demonstration using a large monitor. It would add a new dimension to how human physiology topics are covered in a class and would provide additional experiments to those normally done.

ESTIMATED STUDENT TIME REQUIRED: To use the full potential of the program, it would require computer use once a week for a semester. A minimal time allowance would be one day on response time, one day on skin temperature, one day on respiration, and one day on circulation.

MAJOR STRENGTHS: This package provides a visual (real-time) display of the physiological functions. The program makes excellent use of the computer. It has a good technical summary, including a chart, to aid in using the peripherals.

MAJOR WEAKNESSES: Directions for using the software should be given on the disk as well as in the documentation. The polygraph system is too complex and it is difficult to get all three systems to function at the same time. The average graphs are shown at this point, but not the continuous graphs. The filing functions are not very satisfactory in retrieving previous data, for again you get the average graph and not the continuous graph. The peripherals are not totally reliable, some of the results are not always reproducible. The heart rate works successfully with only a few students, even if a variety of methods are tried. The lack of reliability of the peripherials can make this a highly frustrating activity for students. For large class use this system would need much teacher preparation and debugging of perpherials.

OTHER COMMENTS: The package is a good addition to a course of study.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Experiments in Science

VERSION: Apple

PRODUCER: HRM Software
175 Tompkins Avenue
Pleasantville, NY 10570

EVALUATION COMPLETED: June 1984 by staff and constituents of Jefferson County Schools, Lakewood, Colorado.

COST: $249.00

ABILITY LEVEL: Grades 9 through post-secondary
SUBJECT: Science
TOPIC: Biology, Physics, Chemistry, Earth and Planetary Science
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive monitor and other science equipment not provided with the package (see CONTENT AND STRUCTURE for list).
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Laboratory tool, interfacing.
OTHER FEATURES: Equipment to sense temperature and light and to interface them with the computer.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, measuring.
SCIENCE CONCEPTS INVOLVED: Quantification, validation, cause-effect, change.

DOCUMENTATION AVAILABLE: In supplementary materials — Suggested grade/ability level, instructional objectives, prerequisite skills/activities, teacher's information, student's instructions, students worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide the hardware need to use the computer as a laboratory instrument. To provide authentic experiments in biology, physics, chemistry and earth and planetary science.

INSTRUCTIONAL PREREQUISITES: (INFERRED) To be able to use the computer and to have the science skill required to carry out the experiments described in the Teacher's Guide.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
				●	Content is accurate.
				●	Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
				●	Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree   A-Agree   D-Disagree   SD - Strongly Disagree   NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 5, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: Experiments in Science provides a series of 12 programs on a diskette, along with special hardware, that enable the student to use the Apple II computer as a data gathering/analysis tool for a dozen experiments in Biology and Physiology, Chemistry, Physics, and Earth and Planetary Science. The experiments are described in the Teaching Guide, and further investigations are suggested. Hardware includes an interface box that connects to the Apple game-paddle port; sensitive probes to measure heat, light, and other physical phenomena; and extender cables. Other hardware necessary for these experiments, but NOT provided include: (flashlight, stopwatch or accurate watch with second hand or digital readout, string and tape/masking tape, electrical tape, cellophane tape, immersible Celsius thermometer, ruler or tape measure, styrofoam coffee cups, black or construction paper to block light, test tube [13x100 mm] and test tube rack, hotplate, pyrex flask and beaker for boiling water, ringstand and two right angle rod connectors, short piece of half-inch dowel or aluminum rod, coins or other weights, table or support rod for pendulum, aluminum foil and polytehylene wrap, ice cubes and insulated container, notebooks and pencils, moth crystals [paradichlorobenzene], various standard chemicals, graduated cylinder, pipettes, medicine droppers, stirring rod, suction bulb, light bulb in holder, wick [or shoelace], marking pencil).

POTENTIAL USES: This package was designed for use in Grades 9 to 12 but, could be used at Grades 7 or 8 with the appropriate teacher direction and supervision. It can be used for teacher demonstrationsm, or as a science lab to be used by individuals or small groups. The complete package complements standard courses in general science, and individual experiments can also be used in the relevant science subjects. Computer science students can work with the programs as an introduction to the use of the computer as a laboratory instrument.

ESTIMATED STUDENT TIME REQUIRED: A student would not work through all of the experiments but would do selected ones for a selected class. The time could run from 15 minutes (if teacher has it set up) to several weeks for "a design your own program."

MAJOR STRENGTHS: The package provides an accurate and versatile tool which allows for student's creativity. The instant graphic feedback helps make the package very motivational. The support materials are clear and comprehensive.

MAJOR WEAKNESSES: The package could be intimidating to some instructors due to the complexity and time allotment to set up. It would be difficult to adapt for use in a large class and would require a dedicated computer in the science classroom. For seventh and eighth grade students, liquids and computers may not be compatible.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Explorer Metros: A Metric Adventure

VERSION: Apple

PRODUCER: Sunburst Communications
39 Washington Avenue,
Suite RMS
Pleasantville, NY 10570

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $55.00

ABILITY LEVEL: Grades 4 through post-secondary.
SUBJECT: Science, Mathematics
TOPIC: Metric measurements
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, IIc, single disk drive, and color monitor preferred.
REQUIRED SOFTWARE: DOS 3.3 and Applesoft.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving.

OTHER FEATURES: Content control.
SCIENCE PROCESSES INVOLVED: Acquiring information, estimating, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Quantification.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, students worksheets.

INSTRUCTIONAL OBJECTIVES: (STATED) To give students experience in using metric measurement and to develop estimation skills, using mass, capacity, length and temperature.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need an introduction to the metric system.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 5, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This metric measurement simulation package consists of one diskette, back up diskette, and a teacher's guide.

Students explore a colorful, alien planet while learning the estimation skills of metric capacity, mass, length and temperature.

As leaders of an exploration party, students must face randomly generated encounters, make decisions and report back to the captain. Speedy decisions are important, since time is counted.

Students choose one of three options presented. They may consult a metric table or a robot named Dugan before answering, but if they fail to complete all encounters in the allotted time, they are beamed back to the ship. Colorful graphics help make this program a favorite with students.

The ability of the computer to vary the elements of the simulation each time the program is run allows the program to be used repeatedly. This program also provides a summary after each use of the simulation, listing those areas of metric measurement which appear to need more practice.

The Teacher Option of the Explorer Metros program allows modification of the preprogrammed material, substitution of material designed by the teacher for the preprogrammed material, or the addition to the program of material designed by the teacher. This permits the program to serve the specific needs of particular students at different levels of experience with metric measurement.

POTENTIAL USES: This program would be good as a metric review for students or small groups of students. Students must have a basic knowledge of metrics before using this program.

ESTIMATED STUDENT TIME REQUIRED: The program would require about one class period as long as the student has a good metric background.

MAJOR STRENGTHS: It gives the student a motivational and fun way to practice estimating metric measurements and decision making. The feedback is immediate and rewarding. The editing feature which allows you to design some or all of your own "metric adventure" is very well done.

MAJOR WEAKNESSES: The package is limited to estimating measurements with no actual measurements involved. The wording in "Encounter #6" is a little confusing.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Fun House Maze

VERSION: Apple, copyright 1984

PRODUCER: Sunburst Communications
39 Washington Avenue,
Suite RMS
Pleasantville, NY 10570

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $55.00

ABILITY LEVEL: Grades 4 through 12
SUBJECT: Sciences, Mathematics
TOPIC: Problem Solving
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor (color preferred).
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Game, problem solving

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Cause-effect, model, perception, probability.

DOCUMENTATION AVAILABLE: In program -- program operating information, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, teacher's information, resource/reference information, student worksheets.

INSTRUCTIONAL OBJECTIVES: (STATED) To improve problem-solving skills. Specific objectives are listed in the manual for each classroom and computer lesson in the package.

INSTRUCTIONAL PREREQUISITES: (STATED) Students need to be at a fourth grade or above reading level. Students must complete the series of seven classroom activities before attempting the software activity.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
●					Instruction integrates with prior learning.
●					Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: The package consists of a manual and two diskettes (one program and one backup) in a plastic three-ring binder. The manual contains background information for the teacher; seven preplanned classroom lessons with handouts, worksheets and teacher information; a lesson plan for use with the software lesson; and hints for working with the Apple computer. The classroom lessons are sequential prerequisites to the software lesson. The FUN HOUSE MAZE classroom activities are designed for students in grades four through six, but the software is appropriate for older students as well. FUN HOUSE MAZE provides students with practice in recognizing patterns or sequences, successive scanning (using trial and error), searching for clues and hints, and constructing a model — skills that ultimately lead the student through the maze to the exit. FUN HOUSE MAZE offers five levels of difficulty with each level containing a set of mazes randomly selected by the computer. The object of the game is to recognize the pattern needed to get through the maze.

POTENTIAL USES: The package could be used to teach problem solving strategies. The program would be a nice addition to a problem solving unit. It could also be used to develop spacial relation skills.

ESTIMATED STUDENT TIME REQUIRED: 15 minutes to one hour.

MAJOR STRENGTHS: The program is challenging and requires good thinking skills. It is both interesting and motivational. The program flows in a sequential manner.

MAJOR WEAKNESSES: Some may find the package difficult, for it requires a certain skill to complete it. Students who do not have good spacial relations skills will have a lot of difficulty understanding the changes in directions.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Genetics

VERSION: Apple

PRODUCER: TIES
1925 W. County Road B-2
Roseville, MN 55113

EVALUATION COMPLETED: April, 1983 by the staff and constituents of PREPS, Mississippi State, Mississippi.

COST: $49.95

ABILITY LEVEL: Grades 4 through 8
SUBJECT: Science, Health
TOPIC: Genetics
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 32K Apple II plus, IIe, or IIc, single disk drive, and color video monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Drill & practice, simulation, problem solving.

SCIENCE PROCESSES INVOLVED: Interpreting information, predicting, using numbers, inferring..
SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, model, invariance, replication, validation.

DOCUMENTATION AVAILABLE: In program — Student's instructions. In supplementary materials — Suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, post-test, teacher's information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) Chromy Bug — to identify and correctly use the rules for determining the parental gene traits that will be transmitted to offspring. Blood Typing — to use the following to correctly determine the blood type of an offspring: a) rules for identifying blood types; b) blood type test results; and c) the parent's genotypes.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
		●			Content is accurate.
		●			Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL PREREQUISITES: (STATED) For Chromy Bug — appropriate after a study of: 1) function of genes and chromosomes; 2) relationship between dominant and recessive genes; 3) mechanism for transmitting genes from parent to offspring; and 4) basic structure and function of the cell. For Blood Typing — appropriate after a study of: 1) blood composition; 2) blood typing procedures; 3) how blood types are inherited; and 4) use of Punnett Square to determine possible gene combinations.

CONTENT AND STRUCTURE: Genetics contains two drill and practice/simulation programs. In Chromy Bug, students use the rules of dominance to decide which of the parent's gene traits will be dominant and will be transmitted to the offspring. In Blood Typing, students are given the rules for inheriting blood types and simulated procedures for typing blood with Anti-A and Anti-B serums. The students then identify blood types in a simulated hospital laboratory.

POTENTIAL USES: This package could be used by individual students, small groups, or as a class demonstration model for blood typing.

ESTIMATED STUDENT TIME REQUIRED: 3 to 4 hours total.

MAJOR STRENGTHS: The program along with the several worksheets and assignments give the students good practice in blood typing. The large lettering, enables the program to be easily viewed by a group. It is useful for the teacher to be able to evaluate the student records on the diskette. The graphics in the program are well done.

MAJOR WEAKNESSES: Blood typing appears to be the better of the two programs. In Chromy Bug, a population would eventually be completely dominant if developed with this model. Also for a pair of adults there is only one possible offspring. This is not a realistic model. To enter the 15 traits takes a long time, this may be too slow for some, and too advanced for others. The eyes do not appear until the eye color is selected.

OTHER COMMENTS: The package is a bit misleading in that it implies genetic codes can be changed. Rather than go back and change an existing bug's code, a new bug should be created. In the Chromy Bug program the concept of semi-dominance is introduced to show how recessive alleals can in combination cause changes. This is not clear cut concept and needs to be expanded in the guide book so that teachers can deal with it. The term semi-dominance has not shown up in any of the genetics reference material.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware*

The Search Series: Geology

VERSION: Apple

PRODUCER: McGraw Hill
1221 Avenue of the Americas
New York, NY 10020

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $180.00

ABILITY LEVEL: Grades 5 through 9
SUBJECT: Science
TOPIC: Geology
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive and monitor. Also available for the TRS-80 Model III and IV.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Change, interaction, model.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To have the students learn new vocabulary, be able to organize information about the science of geology, learn principles of energy management, and to inform the students of the history of oil exploration.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The students need to be at a fifth grade reading and comprehension level.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
			●		Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more researchers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package consists of diskette, back-up diskette, teacher's guide, and 20 student booklets. This simulation of a geology search requires critical thinking. The students learn to make intelligent decisions based upon information from rocks, fossils, and underground structures to drill for oil. This program is designed so that a single computer serves an entire class. The diskette will keep up to 100 different user-groups seperate.

POTENTIAL USES: This is a simulation that would require a considerable investment of time. It was designed to be used with a class divided into teams consisting of 3-4 people. It would require students that are logical, competitive, and have a long attention span.

ESTIMATED STUDENT TIME REQUIRED: 1-5 class periods.

MAJOR STRENGTHS: The program allows for a lot of creative thinking as well as logical thinking on the part of the user. The student is required to interpret and make numerous decisions based on their data. The graphics are utilized extremely well for they require students to analyze what is shown and use them to make decisions.

MAJOR WEAKNESSES: The target group of grades 5 through 9 is too low. The program requires a tremendous amount of patience. In the student workbook there is alot of information and vocabulary given. It is not always presented clearly and logically. It is difficult to see the correlation between the workbook and the simulation game at some points.

OTHER COMMENTS: Reviewers would be reluctant to use this program with average or below average students due to the long and tedious process. There needs to be some levels of difficulty built into the program. They would not use the program at all with 5th or 6th graders.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Graphs and Charts

VERSION: Commodore 64

PRODUCER: Micro Ed, Inc.
P.O. Box 444005
Eden Prarie, MN 55344

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $34.95

ABILITY LEVEL: Grades 5 through 9
SUBJECT: Science, Math
TOPIC: Graphs and charts
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Commodore 64, single disk drive, and monitor
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, game, problem solving.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Cause-effect, quantifications, scale, time-space.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information.

INSTRUCTIONAL OBJECTIVES: (STATED) To introduce making graphs and charts, and show how to use them to analyze data and reach conclusions.

CONTENT AND STRUCTURE: This package consists of one diskette and a documentation sheet. This four-pack stresses the value of graphs and charts as a way of presenting information and making comparisons. The learner is challenged to analyze the data shown and reach certain conclusions.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package consists of a circulation disk, a back-up disk, Teacher's Guide, and student worksheets. The program provides for an evaluation of the nutritional value of the student's diet and gives a quiz on knowledge of nutritional value of foods.

POTENTIAL USES: This package could be used by individuals or small groups at the junior or senior high school level in science, health or home economics classes to supplement a unit on nutrition. The package is most useful as a unit culmination activity or as a teacher demonstration tool.

ESTIMATED STUDENT TIME REQUIRED: 15 to 20 minutes for the student to enter the data after completing the forms. 10 minutes per student to take the quiz.

MAJOR STRENGTHS: The ability to add to the food list for diet analysis is very useful. Background information provided in the manual is helpful. The list of follow-up activities is good, but minimal in detail. Once the data has been entered, the analysis is supplied quickly.

MAJOR WEAKNESSES: Instructionally, the package has a fixed sequence of presentation. Even the quiz, which contains few questions to start with, presents them in the same order each time the quiz is taken. Since the package employs no graphics, the use of the package is not very exciting for students. The motivation comes from finding the results of the analysis. No help screens are available for the student who encounters difficulty. One evaluator pointed out that this package provides nothing that couldn't be done using printed materials and charts. The documentation lacks student instructions and program operating instructions. Consequently, the teacher must provide a considerable amount of instruction to the students. The time required for each student to enter the data after completing the form would make the package difficult to use with limited hardware.

OTHER COMMENTS: It would be helpful if the student could review the foods she/he has already entered in the diet analysis program as she/he goes along.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate **SCIENCE** *courseware.*

Home Automatic Weather Station

VERSION: Commodore 64, 1983

PRODUCER: VAISALA, Inc.
2 Tower Office Park
Woburn, MA 01801

EVALUATION COMPLETED: By the staff and constituents of the Northwest Regional Educational Laboratory, Portland, Oregon.

COST: 199.95

ABILITY LEVEL: Grades 7 through postsecondary.
SUBJECT: Science
TOPIC: Earth science/Weather
MEDIUM OF TRANSFER: 5 1/4 in. disk.
REQUIRED HARDWARE: Commodore 64, single disk drive, monitor, printer (optional).
REQUIRED SOFTWARE: An initialized blank disk
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Laboratory tool and demonstration.

OTHER FEATURES: Interfacing
SCIENCE PROCESSES INVOLVED: Interpreting data, measuring, observing, and predicting.
SCIENCE CONCEPTS INVOLVED: Cause-effect, change, cycle, interaction, quantification, and scale.
DOCUMENTATION AVAILABLE: In program - Program operating instructions, student's instructions. In supplementary material - Instructional objectives, program operating instructions, teacher's information, resource/reference information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: STATED To help the user obtain precise readings of the temperature, barometric pressure, wind, humidity, cloud formation, and precipitation of the local weather quickly and easily.

INSTRUCTIONAL PREREQUISITES: INFERRED Students need to know weather realted terms and their meanings.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
				●	The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package consists of one diskette, a weather sensor, and a 47 page support manual.

POTENTIAL USES: This program could best be used in a science classroom where a computer is stationed for a block of time, perferably the entire year. The program would compliment any unit on weather. It would be used mainly as a demonstration tool for the teacher which gathers and displays data. It would make a good interest center in which daily readouts and predictions could be posted and then compared with the actual weather conditions. It could also be used in a computer science class to show an application of the computer. There is also a "user Programming" section in the manual that gives ideas for creating other weather programs. This would make a nice project for computer-science students doing a science fair project, or for talented and gifted students.

ESTIMATED STUDENT TIME REQUIRED: After the teacher has set up the program (entered the constants, and installed the HAWS unit) and explained its operation, students could spend as little as 5 to 10 minutes at one setting obtaining the local readings.

MAJOR STRENGTHS: It is like having your own weather station in the classroom. The data appears to be very accurate and sensitive to weather changes. It is a good example of how we use meteorological data to determine such things as growing seasons, chill factors, heating concerns, and others. All of the displays are clear and uncluttered. The program gives the user an option of using the actual readings or inputting their own. This allows for some "what if" exploration by enabling the user to compare and analyze the relationships of the different readings. The program is very versitile in its uses and easy to use once it is set up. The support material contains a well done introduction, program operating instructions, and background information on each topic.

MAJOR WEAKNESSES: The program accesses the disk many times and some of the readings are rather slow. On some of the graphs the values on the vertical scale are not easily determined and can be misleading. The amount of change that appears on the graph may appear larger than it actually is unless the user calculates the difference on the vertical scale. In a couple of the programs, input that are too small or too large will cause the program to break, and give an illegal quantity error.

OTHER COMMENTS: A lot of important instructions and background information is presented in the users manual only. Therefore, it is imperative that the instructor read through the manual to be able to fully utilize the program. In most of the programs, the data and/or analysis is given with little or no explanation. This package is a tool and not intended to perform instuction. The teacher will have to integrate the program into the curriculum to make it motivating and relevant to the student. A printer is needed to really utilize the capabilities of the program in the classroom setting. An additional disk is also needed to save data when using the program entitled TREND. There is no sound and little graphics in the program. This program has a lot of classroom potential given the right situation and instruction.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Health Awareness Games

VERSION: Apple, 1983

PRODUCER: HRM Software
175 Tompkins Avenue
Pleasantville, NY 10570

EVALUATION COMPLETED: June 1984 by the staff and constituents of Jefferson County Schools, Lakewood, Colorado.

COST: $99.00

ABILITY LEVEL: Grades 9 through post-secondary
SUBJECT: Sciences
TOPIC: Life Science, Health
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor
REQUIRED SOFTWARE: DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Game
OTHER FEATURES: Personal inventory
SCIENCE PROCESSES INVOLVED: Inferring, hypothesizing, interpreting data.

SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, organization, model.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — Suggested grade/ability level, program operating instructions, resource/reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To develop an awareness of those factors which influence your health.

CONTENT AND STRUCTURE: The complete package includes the five health topics described below which are included on a single disk. A Teaching Guide accompanies the disk.

Coronary Risk asks the user to answer a series of questions. It then calculates the individual's risk of coronary heart disease and explains the risks. If the individual does not know his or her cholesterol values or blood pressure, these are taken from averages of comparable groups of people whose values have been recorded. The various risks that a person faces are discussed.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
		●			Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 2, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

Why Do You Smoke? determines each smoker's primary reasons for smoking, based on the smoker's answers to 18 multiple-choice questions. The reasons fall into six groups: stimulation, handling, pleasure, reduction of tension, craving, and habit. Each of the six groups is analyzed and the individual profile is presented. Advice on dealing with smoking and its effects is offered.

Exercise Weight asks a series of questions, and on the basis of the answers determines the most desirable weight for the individual. The right caloric intake to achieve ideal body weight is then calculated, and the user is given a diet pattern that will best suit his or her needs.

Life Expectancy dramatically demonstrates the effect of a number of life conditions and personal characteristics on anyone's expected lifespan. As the respondent answers each of a series of questions, the answer is matched to the program's database, and the resulting change in life expectancy is shown.

Lifestyle offers advice based on the effects of personal living habits on health and life expectancy. The program correlates a wide range of significant life-affecting behaviors and gives them a numerical value.

POTENTIAL USES: One possible use would be as an enrichment activity, allowing students to go through whichever programs interest them. This package was designed for use at the secondary level and above. However, students at Grade 8 or below may effectively use the package by giving their parents or older siblings a questionnaire about the material covered and then go through the programs using those responses.

ESTIMATED STUDENT TIME REQUIRED: One class period.

MAJOR STRENGTHS: This software deals with important health issues and provides a means for personalizing health information.

MAJOR WEAKNESSES: The information and material is not appropriate to junior high school students. It is difficult for junior high students to personalize risk of a heart attack. The Exercise Weight program appears accurate only for people over 25 years old. In Life Expectancy the most recent year of birth accepted is 1969, which is out of range for most junior high students. (According to the producer, an updated version will be available soon allowing for input of dates more recent than 1969.) More emphasis on exercise and drugs would increase its interest level.

OTHER COMMENTS: Changes need to be made to accommodate younger ages in terms of data, projections, and teacher instructions.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Heredity Dog

VERSION: Apple, 1983

PRODUCER: Human Relations Media Software
175 Tompkins Avenue
Pleasantville, NY 10570

EVALUATION COMPLETED: June 1984 by the staff and constituents of Jefferson County Schools, Lakewood, Colorado.

COST: $49.00

ABILITY LEVEL: Grades 9 through 12
SUBJECT: Sciences
TOPIC: Biology, Genetics
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor (color).
REQUIRED SOFTWARE: DOS 3.3 and Applesoft.
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Tutorial, simulation.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information.
SCIENCE CONCEPTS INVOLVED: Quantification, interaction, validation, fundamental entities, model.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — Suggested grade/ability level, instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide an introduction to or review of the following key concepts: Diploid organisms have two copies of each gene, which may compromise two identical alleles (homozygous) or two different alleles (heterozygous); and each parent passes on only one member of each of its pairs of alleles to its offspring. To develop and extend understanding of the relationship between genotype and phenotype. To develop and extend understanding of the concept of dominance or recessiveness of phenotypic traits. To develop

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use of recommend use of this package with little or no change.

Summary: Scale for 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

an awareness of the randomness of allelic segregation, as expressed in the equal probability of transmission of each member of a pair of alleles from a parent to its offspring. To develop an awareness of the randomness of gene assortment, as expressed in the independence of transmission of alleles of one gene from the transmission of alleles of a second gene.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need prior instruction on the concepts listed under objectives.

CONTENT AND STRUCTURE: Heredity Dog is a genetics simulation that allows students to mate dogs of different coat colors and patterns. The computer then produces litters of pups and students can study the relationship of the genotypes and phenotypes of the pups to those of their parents.

There are two series of simulations. In the first, "Single Gene Inheritance," five different examples of single gene inheritance are available. Each gene has two alleles that have a simple dominant/recessive relationship. In the second series, "Inheritance of Two Genes," five two-gene systems are available. The genes are autosomal and assort independently. For two of the systems, the action of one gene masks the phenotypic expression of the other gene.

POTENTIAL USES: The package is designed for use at the secondary level but could be used with the higher ability junior high student. It could be used for review or for development of concepts.

ESTIMATED STUDENT TIME REQUIRED: 2-3 hours if all worksheets were used.

MAJOR STRENGTHS: The program allows the user to choose parent genotypes and a large number of offspring for determining genotypic and phenotypic ratios. Inclusion of suggested uses with procedures and worksheets are useful to the teacher.

MAJOR WEAKNESSES: The general junior high students will find the program difficult. The dihybrid cross and the concept of randomness is too hard.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Home Energy Conservation

VERSION: Apple

PRODUCER: Educational Materials
and Equipment
PO Box 17
Pelham, NY 10803

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Public Schools, Rockville, Maryland.

COST: $55.00

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Science
TOPIC: Energy, Environment
MEDIUM OF TRANSFER: 5 1/4 in. disk
REQUIRED HARDWARE: Apple II Family, one disk drive, monitor and optional printer. Also available for TRS-80 Model III.
REQUIRED SOFTWARE: DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment

INSTRUCTIONAL TECHNIQUES: Simulation, laboratory tool, problem solving, and inventory.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information and measuring.
SCIENCE CONCEPTS INVOLVED: Quantification, energy-matter

DOCUMENTATION AVAILABLE: In Supplementary Material -- suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, resource/reference information, student worksheets, follow-up activities and glossary.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
●					Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
●					Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is reasonable compared to its instructonal value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL OBJECTIVES: (STATED) This package will help students to:
1. find ways of conserving thermal and electrical energy, 2. identify the features of a building that affect its energy efficiency, 3. develop a plan to reduce heating costs and electricity consumption, 4. understand the advantage of more efficient electrical appliances, 5. evaluate hypotheses in the light of experimental results, and 6. improve data interpretation and graphing skills.

INSTRUCTIONAL PREREQUISITES: (STATED) Students should have a basic understanding of the relevant forms of energy (thermal and light); energy sources (fuels, electricity, solar); temperature and its measurement; and insulating materials.

CONTENT AND STRUCTURE: This package contains a circulation disk, a back-up disk and an 11 page Users Guide. With the Home Energy Conservation program, students perform an energy audit on home space heating and electricity usage. There are two major modules: 1. Home Heating Audit — students manipulate variables such as house specifications, climate and type of fuel to determine conservation effect and cost effectiveness of each factor. Results are displayed in a Heat Loss Summary Table with print option for hard copy, a "Heat Photo" diagram and bar graph. 2. Conserving Electricity and Hot Water — divides the consumption of electricity into seven categories and provides a list of appliances for each. Students may change an appliance's wattage and/or hours used to determine the effects of replacing appliances with more efficient ones and/or changing use patterns. The cost of electricity may also be changed. Results are displayed on a Usage Summary Table. The print option provides hard copy of the Summary Table and any or all category lists. The "spread sheet" technique is used where a change in one variable is immediately reflected in all other dependent variables.

POTENTIAL USES: This package will work well for grades 7-12 independent study projects, labs on energy conservation, or team problem-solving situations. Students could evaluate their own homes and compare the results with others or they can "design" the ideal energy efficient home.

ESTIMATED STUDENT TIME REQUIRED: One week.

MAJOR STRENGTHS: Students are free to explore home energy conservation with great flexibility and control. The program is very versatile and easy to apply to different classroom activities. The opportunity to analyze the results is enhanced by graphing and printout capabilities. The personal approach stimulates student interest.

MAJOR WEAKNESSES: None stated.

micro|SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE courseware.

Home Energy Savings

VERSION: Apple, copyright 1983

PRODUCER: HRM Software
175 Tompkins Avenue
Pleasantville, N.Y. 10570

EVALUATION COMPLETED: June 1984 by the staff and constituents of TIES, Roseville, Minnesota.

COST: $35.00

ABILITY LEVEL: Grades 7 through postsecondary
SUBJECT: Sciences, Environmental Education
TOPIC: Energy
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, monitor, and 32K TRS-80, Models III and IV
REQUIRED SOFTWARE: Apple: Applesoft, DOS 3.3, Trs-80: TRSDOS
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Game, problem solving

SCIENCE PROCESSES INVOLVED: Inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Cause-effect, change, interaction, quantification, model.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To understand several parameters of home energy savings. To list the most cost-effective measures in reducing heating bills. To understand the problems that can be associated with making home energy improvements. To list energy saving home improvements. To understand the relationship between the heating bill and the weather. To understand the cost effectiveness of various energy saving home improvements.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
				●	Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This game can be played by one or more students. Their task is to make sensible investments, within a given budget, that will help them to conserve energy in the home. In the process of spending their limited dollars, students learn about insulation methods, storm windows and doors, furnace replacement, lowering the thermostat, and other easy measures. The program lets students compete in a friendly fashion for energy savings and learn at the same time.

POTENTIAL USES: This package could be useful to promote interest in a unit on energy. It would make a good starting point for a class discussion on home energy conservation. It could be used as an individual or small group activity in a physical science or applied science class. In a unit on energy, it could be used both as a pre- and post activity.

ESTIMATED STUDENT TIME REQUIRED: It will take approximately 20 minutes for a 5-year cycle — once the student is familiar with the options.

MAJOR STRENGTHS: Reviewers liked the option of one to four students using the program at one time. They also felt the program was very motivational. The same student can use the program several times.

MAJOR WEAKNESSES: The screen layout could be improved. Colds need not be related to the temperature of the house as is suggested by subtracting the cost of doctor bills from amount alotted for heating.

OTHER COMMENTS: Options available in the program need to be expanded. Students should have a choice of the type of furnace in order to compare costs. It is important for the discussion in the class to take place after the disk has been used so students can share their results.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.
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microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

In Search of the Most Amazing Things

VERSION: Atari

PRODUCER: Spinnaker
215 First St.
Cambridge, MA 02142

EVALUATION COMPLETED: March 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $40.00

ABILITY LEVEL: Grades 6 through 11
SUBJECT: Science
TOPIC: Mapping, Problem Solving, Scientific Method
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Atari, single disk drive, color monitor, and joystick. Also available for Apple.
REQUIRED SOFTWARE: Basic cartridge
INSTRUCTIONAL PURPOSE: Enrichment
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving

OTHER FEATURES: Mapping
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, decision making.
SCIENCE CONCEPTS INVOLVED: Interacting model, population.

DOCUMENTATION AVAILABLE: In program — Sample program output, program operatin instructions, student's instructions. In supplementary materials — Program operating instructions, resource/reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To give students experience in making decisions based on information they are given.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need to be able to read at a 6th grade level and know how to operate a computer (the disk must be turned over during play).

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EVALUATION SUMMARY

SA	A	D	SD	NA	
				●	Content is accurate.
				●	Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
		●			Purpose of package is well defined.
				●	Package achieves defined purpose.
				●	Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
				●	Instruction integrates with prior learning.
		●			Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package includes one cartridge, a small book with the story and background of the simulation, and a reference card for quick access to information. This is a high level interest adventure game. Students command a vehicle which rides or flys over the surface of a planetoid. The user must outfit the liner and make several decisions along the way. The ultimate goal is to search the planet for the most amazing thing, avoiding wierd creatures, interviewing strange cultures and not get lost.

POTENTIAL USES: This package could act as a high level interest builder, enrichment activity, and motivational device. It is an adventure game which can be played by individuals or small groups. It would not be suitable for large groups due to the fact that it goes too slow. With appropriate support materials it could be used to teach such concepts as logic, mapping, force and motion, information gathering, planning, etc.

ESTIMATED STUDENT TIME REQUIRED: The minimum time would be 3-5 class periods. The maximum time is unlimited.

MAJOR STRENGTHS: The program stimulates a high level of interest as well as creative thinking. The student is making constant decisions from a variety of choices which lead to additional choices and in some cases consequences. The student input is given both verbal and graphic responses.

MAJOR WEAKNESSES: The purpose as a game is defined, but as an instructional tool the purpose is only generally defined in the support materials. There is no real attempt to give educational content or to integrate it into the classroom curriculum. The program does not always make it clear what actions are appropriate.

OTHER COMMENTS: As an instructional device this program would require the development of extensive supplementary materials.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware*

Interpreting Graphs

VERSION: Apple

PRODUCER: Conduit
The University of Iowa
Oakdale Campus
Iowa City, IA 52242

EVALUATION COMPLETED: May 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $45.00

ABILITY LEVEL: Grades 8 through 12
SUBJECT: Math, Science
TOPIC: Graphs
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor. Also available for the Monroe.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Remedial, standard instruction.
INSTRUCTIONAL TECHNIQUES: Tutorial, microworld, game, problem solving.

SCIENCE PROCESSES INVOLVED: Interpreting information, using the Scientific Method, measuring, inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, model, symmetry, time-space.

DOCUMENTATION AVAILABLE: In program — Program operating instructions, teacher's information, student's instructions. In supplementary materials — Suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To help students learn to make meaningful interpretations of graphs of physical phenomena.

INSTRUCTIONAL PREREQUISITES: (STATED) Students should have familiarity with graphs and some experience using rectangular coordinates to locate points on a grid.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
				●	Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change. Suggest more information in guide on how to set coordinates in ESCAPE game.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characterics - 3, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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CONTENT AND STRUCTURE: This package includes one diskette and a copy of Instructor Notes. The first program introduces students to using graphs and descriptions of physical phenomena. A brief description of an event is written below the graph, and the student selects the graph line whose shape is most appropriate for the given event. The emphasis is on visualizing the general relationship between two variables. The second program is a game that uses a rectangular coordinate grid as a city map. There are three levels of difficulty in the game. The emphasis is on interpreting data from a graph, which is often incomplete and requires problem solving techniques, and the plotting of the coordinates in the four quadrants.

POTENTIAL USES: The program could be used to teach graphs in connection with physical phenomena. It could be used effectively with small groups or on an individual basis. The first program is a tutorial on graphs and the second program is a game using information from graphs and plotting points on a grid.

ESTIMATED STUDENT TIME REQUIRED: 20 minutes per program.

MAJOR STRENGTHS: The program uses varied examples for interpretation on the graphs. It eliminates the incorrect graphs so the students can study correct graph before it continues. The program is set up as a series of events to which the user must respond and then reviews all missed items at the end of each series. The documentation is brief but adequate and complete.

MAJOR WEAKNESSES: Responses in the program are very impersonal. In the "Escape" segment, the user is under a time-pressure which could be very frustrating, as there is no provision for adjustments. Also, the instructions on how to set the coordinates are poor. The axes and scale is not displayed on the grid of the ESCAPE game. This slows down repsonse time and increases frustration. Success requires lots of practice..

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Introduction to General Chemistry

VERSION: Apple

PRODUCER: Compress
A Division of Wadsworth, Inc.
P.O. Box 102
Wentworth, NH 03282

EVALUATION COMPLETED: July 1984 by staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: Individual Disks with back-up; $70.00
Entire 8 Disk series with back-up; $470.00

ABILITY LEVEL: Grades 7 through post-secondary.
SUBJECT: Sciences
TOPIC: Chemistry
MEDIUM OF TRANSFER: 5-1/4" disk.
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Standard instruction.

INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, simulation, game.
SCIENCE PROCESSES INVOLVED: Interpret data, inferring, hypothesizing, observing.
SCIENCE CONCEPTS INVOLVED: Quantification, model, interaction, fundamental entities, validation order.

DOCUMENTATION AVAILABLE: In program — student's instructions. In supplementary materials —program operating instructions, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide a series of supplementary computer activities for a chemistry class.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need prior instruction on the topic covered in the various activities.

CONTENT AND STRUCTURE: This package contains eight disks, a two page instruction sheet, and a four page list of all the programs on the disks. The disks cover topics in chemical elements, inorganic nomenclature, chemical formulas and equations, atomic weights, percent

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EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
●					Feedback is effectively employed.
●					Learner controls rate and sequence.
●					Instruction integrates with prior learning.
	●				Learning can be generalized.
				●	User support materials are comprehensive.
				●	User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

composition, chemaze, ideal gases, and acids and bases.

POTENTIAL USES: This program provides excellent remedial or supplemental materials useful when teaching basic chemistry concepts. It is most appropriate for high school chemistry students. It could be used as a large group demonstration tool in Chemistry I or in a Physical Science class for the introduction to the periodic table, atomic particles, etc. There are drill and practice possibilities for grades 9-12. With teacher assistance, this program could be used in middle school (names of elements and properties of some elements). Most of the programs can be used as tutorials to teach new material or review material previously taught.

ESTIMATED STUDENT TIME REQUIRED: Since this set covers so many topics, it can be used many different times throughout the year, at one hour per day for up to three days at a time. Because the interactive tutorial menus are divided into small parts of a large topic, a specific segment could be used for ten minutes at the end of a period as a review.

MAJOR STRENGTHS: Many of the programs make excellent use of graphics and sound. The text is very attractive. The response to wrong answers during the tutorials is further information and a re-try. Two wrong answers results in the correct answer being given. After the student enters the correct answer, the program then continues to the next question. The topics are broken up into segments. The lab simulations are well done and represent important experiments similar to those done by first year chemistry students. These materials are an example to other producers, they are excellent!

Periodic Table: The mystery element is imaginative, challenging and engages the mind of the student. The student controls the speed of the program. A score is kept during the test time. Properties of Elements is a good student interaction program.

Nomenclature: A score is kept and the student is told the number of practice problems that are left. Instructions are constantly on the screen to enable the student to leave the program at any time. The graphics and instructions are good and clear.

Chemical Formulas and Equations: HgO experiment and subsequent equation writing is imaginative and effective. The Sodium experiment is also excellent as is Acid-Base. The drill problems are non-threatening and effective. The explanations are clear and concise. The sound can be controlled.

Atomic Weights: The mole concept is used in a non-threatening manner. An attractive, uncluttered screen enhance the program.

Percent Composition: The program gives good problems and immediate feedback on student answers. Help is available when needed. When the student errs, the program forces him/her to work out the problem step by step. The student sees the physical experiment that demands the calculations. Students did very well with this program.

Chemaze: The student has to know chemical reactions and predict the result when certain chemicals mix. It is a clever idea.

Ideal Gases: The graphics enchance the student interaction. Calculators are built in to handle the math problems. The simulations are clearly effective.

Acid and Bases: The graphic representation of the transfer of proton helps a student understand acid-base relationship. Explanations are given after the student answers the more complex question. This reinforces the concept. The program covers many acid-base concepts (ph, equilibrium concentrations, rate of reaction). The program is extremely effective.

MAJOR WEAKNESSES: The level of difficulty is appropriate for first year chemistry students but it would be nice if a more talented student could go into greater depth with more challenging questions or problems. Some of the programs load more slowly than others.

continued

Periodic Table: An answer was incorrect if the space was not inserted between words. This is unusual for these disks - they usually recognize spelling errors as such and accept or correct them.

Chemical Formulas and Equations: The experiment would be enhanced by color.

Atomic Weights: The weights are accepted regardless of the decimal values. The periodic chart gives values to one decimal place. This is not consistent.

Chemaze: This is a "PacMan"-like game. A student has no control over the rate of moving articles. No variation of the board is available. Success depends greatly on the students' ability to manipulate the computer keys.

Ideal Gases: The program is slow in loading, although this is understandable when one sees the complex student interactive graphics. The pressure is in Torrs and atmospheres. This might be a disadvantage for those using kilo pascals.

Acids and Bases: The program concentrates on the HC_1-$HC_2H_3O_2$ system which is good for reinforcement but also gets monotonous.

OTHER COMMENTS: This is a good teaching tool. A color monitor would be a real advantage for best use. The teacher needs to monitor the student use of the package to insure that they are involved in the appropriate activity. The program received excellent comments from all students who worked on them. Students prefer to have instructions on the disk rather than in text. All of the instructions are clear, appropriate and located on the disk with the program being used at the time. Several components of the package are disk-active, thus additional copies of the disks must be purchased for multiple machine use. Those components are; periodic table, nomenclature, percent composition, and acids and bases.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Laws of Motion

VERSION: Apple

PRODUCER: Educational Materials & Equipment
PO Box 17
Pelham, NY 10803

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $93.50

ABILITY LEVEL: Grades 8 through 12
SUBJECT: Science
TOPIC: Physics
MEDIUM OF TRANSFER: 5 1/4 in. disk.
REQUIRED HARDWARE: Apple II or Apple II+, one disk drive, monitor. Also available for TRS-80 Model III.
REQUIRED SOFTWARE: DOS 3.2.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, and simulation.

SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information, using the scientific method, measuring.
SCIENCE CONCEPTS INVOLVED: Cause-effect, force, Quantifying.

DOCUMENTATION AVAILABLE: In supplementary material - Suggested grade/ability level, instructional objectives, program operating instructions, student's instructions.

INSTRUCTIONAL OBJECTIVES: STATED 1. To understand the basic concepts of mechanics through experiments using the inclined plane and an "A-machine". 2. Understand and manipulate variables which affect motion of objects. 3. Enhance data interpretation and graphing skills.

INSTRUCTIONAL PREREQUISITES: Beginning knowledge of the principles of mechanics.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
				●	Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
●					Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: The package contains two disks: Disk 1 has experiments using the inclined plane, Disk 2 has experiments using the "A-machine".

POTENTIAL USES: This package is good for demonstration of difficult concepts or classroom problem-solving activities in grades 7-9. It will also be useful for individual remediation or enrichment.

ESTIMATED STUDENT TIME REQUIRED: One 45 minute period for introduction to each disk. Any quantity of time will be appropriate for individual work.

MAJOR STRENGTHS: The user has control of the variables, allowing exploration of cause and affect in the mechanical system. The user gains practice in experimental design as he/she manipulates the variables. The graphics are good and clearly demonstrate the principles involved.

MAJOR WEAKNESSES: None stated.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Leaf: Structure & Function

VERSION: IBM

PRODUCER: Classroom Consortia Media, Inc.
57 Bay Street
Staten Island, NY 10301

EVALUATION COMPLETED: July 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $69.95

ABILITY LEVEL: Grades 5 through post-secondary.
SUBJECT: Science, Biology
TOPIC: Plants
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 128K IBM PC with RGB monitor or PCjr with composit monitor. A printer is optional. Versions are available for both a dual-sided disk drive, or two single-sided disk drives.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Tutorial, simulation.
OTHER FEATURES: Assessment.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information.
SCIENCE CONCEPTS INVOLVED: Cause-effect, change, organism, validation.

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, post-test, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) Upon completion of this program, the student should be able to: describe the structure and function of the petiole, stem, veins, midrib, and blade; identify the exterior parts of a leaf; compare xylem and phloem tissue; explain water and food transport in plants; label a diagram which shows the parts of a leaf in cross-section; state the function for each layer of a typical leaf;

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
●					User support materials are comprehensive.
	●				User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

Northwest Regional Educational Laboratory
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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

define photosynthesis; describe the structure and function of chloroplasts; explain photosynthesis; describe how the materials for photosynthesis are obtained; list the materials needed and the products obtained from photosynthesis; describe the structure and function of stomates; and explain how varying concentrations of glucose and water affect the opening and closing of stomates.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The students need a general science background.

CONTENT AND STRUCTURE: This package includes one diskette and a comprehensive Teacher's Guide. This courseware package is designed for any general science and biology curriculum. Color graphics illustrate the anatomy and physiology of the leaf. Students explore the role of the leaf as the "chemical factory" of the plant. Simulations, in which students can alter variable, provide feedback. The topics include: Transport in the Leaf, Structure of the Leaf, Photosynthesis and the Leaf, and Action of the Stomates in Gas Exchange.

POTENTIAL USES: This package could be used as a reinforcement activity or as a review before an examination in a biology or general science class. It could be used by individuals or by a teacher as a demonstration tool.

ESTIMATED STUDENT TIME REQUIRED: 1-3 class periods.

MAJOR STRENGTHS: The presentation is very clear and logical. In the "Reviews" and "Photosynthesis and the Leaf" the concepts are very well explained. The answers are done in a random order in the quizzes, thus requiring the user to think each time they use it. It tests the user for understanding of terms and sub-concepts before going on to the next concept. If a question is missed, it goes back over the material. The package is convienent and durable to use.

MAJOR WEAKNESSES: When the program takes you back to review a concept you missed, it repeats the original information. In section 2, "Structure of the Leaf," the program asks the user to label the cell diagram. The program did not teach or review the parts of a generalized cell, thus without prior knowledge the user would be frustrated. There are limited interactive parts to this program. The graphics simulation of celery absorbing ink is misleading. Celery does not completely change color as indicated by the graph.

OTHER COMMENTS: With the exception of the "stomate" experiment, a book and lab experiment could present the material as well.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE courseware.

Limiting Factors and Carrying Capacity

VERSION: Apple

PRODUCER: Yaker Environmental Systems, Inc.
P.O. Box 18
Stanton, NJ 08885

EVALUATION COMPLETED: July 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $39.00

ABILITY LEVEL: 9 through post-secondary
SUBJECT: Science
TOPIC: Wildlife
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor (color recommended). Also available for the IBM-PC.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial.

OTHER FEATURES: Assessment
SCIENCE PROCESSES INVOLVED: Acquiring information.

SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, population.

DOCUMENTATION AVAILABLE: In program — Program operating instructions, post-test, student's instructions. In supplementary materials — Suggested grade/ability level, prerequisite skills/activities, program operating instructions, resource/reference information.

INSTRUCTIONAL OBJECTIVES: (STATED) This series is designed to instruct students on the wildlife concepts of limiting factors and carrying capacity.

INSTRUCTIONAL PREREQUISITES: (STATED) It is recommended that the students be familiar with the following terms: Ecosystem, Food Chain, Food Web, Diversity and Producer.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
		●			Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
		●			Purpose of package is well defined.
			●		Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
			●		Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
			●		Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The first lesson, BAR GRAPHS, shows a horizontal bar graph with basic information in whole number units. The object is to interpret the graphic data and make calculations by addition and subtraction to answer a list of questions.

The second lesson, LASERSECT, features a coordinate graph, often used in mathematics, that the learner must be able to read by identifying locations (x,y) on the graph. These locations are then used, along with time and speed, to intercept moving objects that represent laser targets.

Two other programs, THE AD GAME and THE GREEN MACHINE, are more advanced and require deeper analysis of data. One shows a series of bar graphs portraying advertising consumers that must be matched with a certain product by graphic inspection. The other deals with a detailed set of statistics and charts used to plot the growth of algae in a pond.

All four programs utilize graphics, animation, and sound.

POTENTIAL USES: This package could be used with individuals or small groups to supplement a unit on charts and graphs in either mathematics or science.

ESTIMATED STUDENT TIME REQUIRED: Each of the four programs on the disk would require from 15-20 minutes to complete.

MAJOR STRENGTHS: The graphics are well done. The objectives are listed at the beginning of each program and a summary of the student's accomplishments are displayed at the end. The program has many built in options such as sound, available "help" section, the ability to view the answer at any time, etc.

MAJOR WEAKNESSES: The feedback message for incorrect responses on all of the programs are blunt and non-encouraging and do not always explain why the response is wrong. In the program LASERSECT, the incorrect response message does not remain on the screen long enough to be read. In the program GREEN MACHINE, the user needs to continually go back to the information sheet in order to answer the questions. It is possible for some students to complete all four programs using trial and error, and never learn the material. The structure of the inputs needs to be changed to insure learning will occur. The user support materials are very limited, they only give the "skill" and a brief description of each program. Although the producer states the package is appropriate for use above grade five, the reviewers felt students above grade nine would find the material boring. One reviewer felt the material could be taught just as effectively using a workbook.

OTHER COMMENTS: The four programs in this package are not a sequence of instruction, but are a collection of programs dealing with the same subject matter. Consequently, they do not thoroughly address the topic.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Mathematics for Science Series 1 & 2

VERSION: Apple

PRODUCER: Merland Scientific Ltd.
247 Armstrong Avenue
Georgetown, Ontario, Canada

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $62.00

ABILITY LEVEL: Grades 6 through 9
SUBJECT: Mathematics, Sciences
TOPIC: Arithmetic
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Commodore 64, 16K Commodore Pet, 48K Apple II+, IIe, or II with language card, single disk drive, monitor. Also available on disk for Commodore.
REQUIRED SOFTWARE: Apple: Applesoft + DOS 3.3

INSTRUCTIONAL PURPOSE: Standard instruction, remediation
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial
SCIENCE PROCESSES INVOLVED: Using numbers, measuring
SCIENCE CONCEPTS INVOLVED: Quantification
DOCUMENTATION AVAILABLE: In Program — Instructional objectives, program operating instructions, pre-test, post-test, student's instructions. In Supplementary Material — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information, resource/reference information, student's instructions.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
				●	Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

INSTRUCTIONAL OBJECTIVES: (STATED) In Basic Math Techniques: To determine the number of significant digits in a given number. To round numbers to a given number of significant digits. To show the results of adding or subtracting measured quantities with the appropriate number of digits in the answer. In Measurement: To read a simple scale and record the reading using the correct number of digits. To read various linear scales and to record the measurement using the appropriate number of digits. To read a vernier scale and record the reading using the correct number of digits.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need to be functioning at a sixth grade ability level.

CONTENT AND STRUCTURE: This package consists of one diskette and a support manual. This series of programs is designed primarily for science students who need specific mathematics skills for use in their science courses.

Each program has a similar format: an objective is stated, then the student is given a choice of doing a lesson or proceeding directly to a set of drill questions designed to test the skill.

Many parts of the lessons and all drill questions are randomly generated so that a student repeating an exercise will be presented with different questions each time through.

The program "Significant Figures" teaches the student how to judge the number of significant digits in a number.

The program "Rounding Off" teaches proper rounding techniques.

In the program "Calculations and Rounding Off" students are asked to perform mathematical (addition and subtraction) calculations (a calculator is simulated on the computer screen) and they write their answers rounded to the appropriate number of digits.

The program "Scale" teaches the fundamental skill of reading a simple metric scale and estimating answers to the nearest tenth of a scale division.

The program "Linescale" extends the ideas covered in the previous program, Scale Reading. The student will learn to read a variety of linear scales and express the reading answers with the appropriate number of digits.

The lesson "Verscale" begins by showing the student what is meant by the term vernier scale. The idea of a vernier scale is illustrated with an animated drawing of vernier calipers.

POTENTIAL USES: Excellent for classroom demonstrations or individual reinforcement.

ESTIMATED STUDENT TIME REQUIRED: One 45 minute period per disk.

MAJOR STRENGTHS: 1. Many lessons include a pre-test and the results are used to match the lesson to the learner's ability. Each lesson includes a good review. 2. The package is very thorough and covers a large quantity of material.

MAJOR WEAKNESSES: The amount of screen text to read is slightly excessive.

OTHER COMMENTS: An excellent program for these topics in both math and science. This makes the program more valuable and cost effective.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Matter and Energy

VERSION: Apple

PRODUCER: Focus Media, Inc.
839 Stewart Avenue
Garden City, NY 11530

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Public Schools in Rockville, Maryland.

COST: $159.00

ABILITY LEVEL: Grades 8 through 12
SUBJECT: Science
TOPIC: Chemistry, Physics, Physical Science, Matter, Energy
MEDIUM OF TRANSFER: 5 1/2 in. disk
REQUIRED HARDWARE: 48K Apple II, II+ or IIe, single disk drive, and monitor. Also available 48K TRS-80 Model I, III, IV; 32K PET; and Commodore 64.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial, game

SCIENCE PROCESSES INVOLVED: Acquiring information
SCIENCE CONCEPTS INVOLVED: Energy-matter.

DOCUMENTATION AVAILABLE: In Program — program operating instructions, student's instructions. In Supplementary Material — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions.

INSTRUCTIONAL OJECTIVES: (STATED) To provide review to an introductory unit on matter and energy. Detailed objectives for each program are listed in the Lesson Planner.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●	●			Content has educational value.
	●	●			Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
	●	●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
		●			Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
●					Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is not reasonable compared to its instructional value.

Evaluators indicated that they would not use or recommend this package.

Summary: Scale 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need prior knowledge on the topics included in this package.

CONTENT AND STRUCTURE: This package consists of one diskette, back-up disk, and a Lesson Planner Guide. There are six menu-driven programs that cover elements, compounds, mixtures, physical and chemical changes, potential and kinetic energy, and energy conversions. All six of the programs are games that help the student learn faster and retain more. Incorrect answers by the student result in tutorial information.

POTENTIAL USES: This package could be used with individual or pairs to provide a review or drill and practice of topics covered in chemistry or physical science.

ESTIMATED STUDENT TIME REQUIRED: Varies.

MAJOR STRENGTHS: The package provides a comprehensive coverage of materials.

MAJOR WEAKNESSES: The drill and practice format allows for very little creativity.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Metric I to V

VERSION: IBM

PRODUCER: Classroom Consortia Media, Inc.
57 Bay Street
Staten Island, NY 10301

EVALUATION COMPLETED: July 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: Each disk - $49.00; Series (5 disks) $225.00.

ABILITY LEVEL: Grades 5 through 12.
SUBJECT: Science/Math
TOPIC: Metric System
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 128K IBM PC with RGB monitor, or PCjr with composit monitor. A printer is optional. Versions are available for both a dual-sided disk drive or two single-sided disk drives.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, problem solving.
OTHER FEATURES: Assessment.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information, measuring.
SCIENCE CONCEPTS INVOLVED: Quantification.

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, post-test, teacher's information, resource/reference information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To teach the fundamentals of metrics to students in elementary through high school levels.

INSTRUCTIONAL PREREQUISITES: (INFERRED) To know how to quickly and accurately handle problems in mathematics dealing with the four whole number operations.

continued on back → →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●	●			The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This is a series of five interactive software packages designed to teach the fundamentals of metrics. Each package includes one diskette and a comprehensive Teacher's Guide. The package includes Fundamentals of Decimals, Math Applications, Units of Measurement, Linear Units, and Area/Density Measurements.

POTENTIAL USES: This package could be used to introduce or reinforce decimal operations, math applications, units of measurements, linear units, and area/density measurements in a math class. The package could also be used to reinforce math skills before using them in a science activity or experiement.

ESTIMATED STUDENT TIME REQUIRED: Each of the five programs will take approximately one or two class periods.

MAJOR STRENGTHS: The graphics enhance the program by illustrating the concepts in a variety of ways. The presentation is very clear. The program uses careful explanations of the process being developed including step by step illustrations in the tutorial. The key points are highlighted in color. At the end of each program there is a test. Missed problems are given an explanation when it is requested.

MAJOR WEAKNESSES: There are a few inconsistencies in the program. The user enters answers from right to left in the tutorial so they can do the problem as they go and left to right in the drill and practice section, because they are to do their work on paper and just enter their answer. Although reviewers knew why this was so, they felt it might be confusing to students. Some of the programs will give you a hint after several errors and some will not. The program has no provision for the teacher to see how the student did on the program.

OTHER COMMENTS: Much of what is achieved by this package can be done just as well with a textbook and direct teaching. If it was less expensive it would be more useful.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Modeling

VERSION: Apple, copyright 1983

PRODUCER: MECC
3490 Lexington Ave. North
St. Paul, MN 55112

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $36.00

ABILITY LEVEL: Grades 6 through 9
SUBJECT: Sciences
TOPIC: Scientific Models
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, and monitor. Also available for a 128K IBM PC, or PCjr.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, decision making, measuring.
SCIENCE CONCEPTS INVOLVED: Cause-effect, force, interaction, model, population, quantification, replication, significance, system, validation, time-space.

DOCUMENTATION AVAILABLE: In program -- program operating instructions, student's instructions. In supplementary materials -- suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, post-test, teacher's information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To describe the purpose of a model and list some of the historical purposes that models have served; recognize that populations increase geometrically; describe some of the factors that control the growth of populations; recognize the importance of refining a model by considering other factors.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low).
Content - 2, Instructional Characteristics - 3, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 9720
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL PREREQUISITES: (STATED) Students need an introduction to algebraic variables.

CONTENT AND STRUCTURE: This package contains a users disk, backup disks, and a 48-page teacher's guide. Much of what scientists believe to be true about the world cannot be seen directly. We can't see an atom, or heat, or the "stuff" that makes up light. Scientists, therefore, develop models as useful ways of thinking about these invisible things. MODELING develops the concept of a model through experiences with "black box" machines. An exponential model describes population growth. Students experiment with the trajectory of flying objects, using the computer to calculate the distance that the objects will fly. By observing the differences between calculated and experimental distances, students can observe the need for change and refinement of the model. This module, divided into three lessons, includes computer programs, handouts, transparencies, and a quiz.

POTENTIAL USES: This program is designed to be used as a demonstration model in front of a class, as well as for use by small groups.

ESTIMATED STUDENT TIME REQUIRED: Part 1, less than 1 class period (30 minutes); Part 2, more than 1 class period (1 hour); Part 3, 1 class period (40 minutes).

MAJOR STRENGTHS: The package has an excellent teachers manual with transparencies and handouts. Good error trapping occurs in the program. The use of graphics enhances the program. The step-by-step instructions are clear and precise.

MAJOR WEAKNESSES: Some of the responses are inappropriate, i.e., slang "Awesome", and negative "WRONG!". The program assumes the learner knows to push RETURN after each response. There is no informaton on how to operate the disk system. Reviewers questioned the use of the Dart gun for junior high students.

In the Dart Gun program, the graphics are out of scale. In the sections which require small groups to use the program, the reviewers anticipate some conflicts over the scheduling (in Suma and Dart Gun). The program assumed that the teacher has some programming experience in the Gloops population program.

OTHER COMMENTS: The reviewers felt the term "modeling" was not emphasized enough. There are very few references to the term and how it correlates to simulations.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Niche: An Ecological Game Simulation

VERSION: Apple

PRODUCER: Diversified Educational Enterprises
725 Main Street
Lafayette, IN 47901

EVALUATION COMPLETED: November 1984 by the staff and constituents of the Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $70.00

ABILITY LEVEL: Grades 8 through post-secondary
SUBJECT: Biology
TOPIC: Ecology
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Plus or IIe, 1 disk drive, monitor. Also available for TRS 80 Models I and III.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment

INSTRUCTIONAL TECHNIQUES: Simulation, game
SCIENCE PROCESSES INVOLVED: Interpreting information, using the scientific method, decision making
SCIENCE CONCEPTS INVOLVED: Organism, change, cycle, system, order

DOCUMENTATION AVAILABLE: In Program — student's instructions In Supplementary Material — Suggested grade/ability level, instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, textbook correlation, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To introduce students to the concept of an ecological niche and to some of the interrelated variables which determine an organism's niche.

INSTRUCTIONAL PREREQUISITES: (INFERRED) None stated.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
		●			Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators strongly disagreed that the cost of the package was reasonable compared to its instructional value.

Evaluators indicated that they would not use or recommend this package. (Note reasons under weaknesses.)

Summary: Scale 5 (High) to 1 (Low)
Content - 2, Instructional Characteristics - 2, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: The package contains one disk and a 21 page User's Guide. Niche is an interactive program which uses a stimulation game format to explore the concept of an ecological niche. In Niche, students must attempt to correctly place an organism in its proper niche by specifying the environment, range, and competitor for the organism. The organism may flourish in a well-specified niche or fail in a poorly specified one. Niche is best used in a small group classroom situation. Because of its relative simplicity and enjoyable game format, it is recommended as an introductory program which can be used as a bridge between computer game playing and more serious computer simulations.

POTENTIAL USES: This package is best used with small groups of 2-4 students, grades 8-college, and after studying fundamentals of ecology.

ESTIMATED STUDENT TIME REQUIRED: 15-30 minutes for 1-2 days.

MAJOR STRENGTHS: The game presents a variety of different niches to explore by changing food, space, and predators.

MAJOR WEAKNESSES: Because the user is not given enough background information to make intelligent and logical choices, the program becomes a big guessing game. For this, it does not make a good introductory program but should be used after one has a background understanding of ecological variables and terms. The program does not develop problem-solving skills.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Nutrition and Food Groups

VERSION: Apple 1984, 1.0

PRODUCER: MECC
3490 Lexington Avenue North
St. Paul, Minnesota 55112

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois

COST: $36.00

ABILITY LEVEL: Grades 6 through 9
SUBJECT: Sciences
TOPIC: Health, Nutrition
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, monitor. Also available for 128K IBM PC or PCjr.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, remediation
INSTRUCTIONAL TECHNIQUES: Laboratory tool

SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information, communicating information.
SCIENCE CONCEPTS INVOLVED: Model, interacting, quantification.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level(s), instructional objectives, prerequisite skills/abilities, sample program output, program operating instructions, post-test, teacher's information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To identify the basic food groups and the types of foods included in each group; to recognize the value of choosing a variety of foods to get important nutrients; and to be aware of the kinds and amounts of nutrients found in certain foods.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
		●			User support materials are effective.
		●			Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: (1 = Low, 5 = High)
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package contains a user's disk, backup disks and a 39-page teacher's guide. The aim of nutrition education is to establish good habits which will result in wise food selections. Today, the computer has the capability of providing consumer information, analyzing the nutrient content of foods, calculating food costs, and aiding the user in grocery shopping and menu and budget planning. Increased use of computers in the nutrition field has the potential for providing significantly improved methods of farming and for increasing overall food production. This module includes a "Lunch in the Computer Cafeteria" food selection activity, a "Nutri-Bingo" game, and a homework assignment. All of these activities are designed to teach about the nutrient content of food, to review food groups, and to demonstrate the importance of making good food choices.

POTENTIAL USES: This program could be used to reinforce concepts previously taught.

ESTIMATED STUDENT TIME REQUIRED: 20-30 minutes per sitting.

MAJOR WEAKNESSES: The same thing can be accomplished in many other ways. The package is drill and practice, and there is not much creativity or motivation. There is no positive reinforcement used in the program.

OTHER COMMENTS: This is not an interesting way of using the computer. There should be a better explanation of the Nutri-Bingo games master sheet included for major nutrient-food types and the Bingo sheet.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Nutrition — A Balanced Diet

VERSION: Apple

PRODUCER: Educational Materials
and Equipment Company
P.O. Box 17
Pelham, NY 10803

EVALUATION COMPLETED: April, 1984 by the staff and constituents of Portland Public Schools and Northwest Regional Educational Laboratory, Portland, Oregon.

COST: Apple: $35.00
TRS-80 $37.00

ABILITY LEVEL: Grades 7 and 8
SUBJECT: Science, Health Education, and Home Economics
TOPIC: Nutrition
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II Plus, disk drive, monitor. Also available on TRS-80.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment

INSTRUCTIONAL TECHNIQUES: Laboratory tool
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, and measuring/quantifying

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — instructional objectives, teacher's information, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To allow students to evaluate the nutritional quality of their diet.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Knowledge of the vocabulary used to discuss nutrition.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
				●	Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
			●		Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: (1 = Low, 5 = High)
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package consists of one diskette and a documentation booklet. It explains two of the most important wildlife concepts, limiting factors and carrying capacity. The program relates habitat, wildlife, man's effects, and the student's personal value system by using color graphics and text. Terminology, a learning section, a scored review section, and quiz complete the package.

POTENTIAL USES: This package could be used as a review or reinforcement of the wildlife concepts by individuals or small groups. The instructor could use "carrying capacity" as a demonstration tool for discussion.

ESTIMATED STUDENT TIME REQUIRED: 30-90 minutes.

MAJOR STRENGTHS: A lot of information is contained in the "Limiting Factors" portion of the program in a well organized format. The package is easy to use.

MAJOR WEAKNESSES: The documentation is poor and inadequate. Useful information is presented in "Limiting Factors" but the presentation is all in the text mode and could better be presented using a different medium. Incorrect responses in "Limiting Factors" received no feedback. In the "Carrying Capacity" portion of the package, the only feedback the user receives is the growth or decline of a line graph. There is no explanation as to why the response is positive or negative. The program does not consider any view point other than that of the wildlife, i.e. farmer.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Oh, Deer!

VERSION: Apple 1984, 1.0

PRODUCER: MECC
3490 Lexington Avenue North
St. Paul, Minnesota 55112

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $44.00

ABILITY LEVEL: Grades 5 through 9
SUBJECT: Scineces
TOPIC: Life Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, decision making
SCIENCE CONCEPTS INVOLVED: Cause-effect, cycle, change, equilibrium, interaction, population.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials -- suggested grade/ability levels, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To apply investigative thinking skills to make decisions based on logic and factural information (Science SELO III:B-1, Social Studies SELO I:D-H, II:A-H, III:B); to recognize the effect(s) of natural and human-created variables on the natural environment (Science SELO II:B-2, Social Studies SELO I-C): to use estimation and computation skills to determine ideal herd size figures for a defined parcel of land (Science SELO II:A-4).

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: (1 = Low, 5 = High)
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

INSTRUCTIONAL PREREQUISITES: (STATED) Students need to be at a sixth grade or above reading level.

CONTENT AND STRUCTURE: This package contains a user's disk, backup disk, and a 38-page support manual. Based on a real-life model, OH, DEER! challenges students to manage a herd of white-tailed deer in Whitetail Hollow, a residential area. During a five-year period, students make a series of decisions necessary to maintain a herd size which is in balance with the natural environment and human tolerance. When a controversial issue like this arises, it becomes necessary to consider the views of the people who are affected. Residents of the area have varying ideas about whether deer sould be removed. This scenario allows students to experience the social pressures of the situation, as well as the effects of control measures on the deer herd. Small groups of students or individual students explore various solutions to the situation. Using estimation and computation skills, decisions are made and tested. The program produces yearly management reports based on decisions made by the students. This leads groups to an understanding of population dynamics, controlled and uncontrolled variables, and animal/human relationships.

POTENTIAL USES: This program could be used in an Ecology unit on population density, biomass, and population estimate topic areas.

ESTIMATED STUDENT TIME REQUIRED: 30 minutes

MAJOR STRENGTHS: The package deals with contemporary problems. Excellent use is made of the capabilities of the computer. The game type format is motivational. The package promotes decision making and problem solving skills.

MAJOR WEAKNESSES: Some of the graphic animation, i.e. deer walking, does not look correct.

OTHER COMMENTS: A hunting option showing the revenue generating power of licensing hunters as a population control factor would be nice.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Passive Transport

VERSION: IBM

PRODUCER: Classroom Consortia Media, Inc.
57 Bay Street
Staten Island, NY 10301

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $69.95

ABILITY LEVEL: Grades 5 through post-secondary
SUBJECT: Science
TOPIC: Biological Systems
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 128K IBM PC with RGB monitor, or PCjr with composit monitor. A printer is optional. Versions are available for both a dual-sided disk drive or two single-sided disk drives.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Tutorial, simulation.

OTHER FEATURES: Assessment.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information.
SCIENCE CONCEPTS INVOLVED: Cause-effect, change, validation, organism system.

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, post-test, teacher's information, resource/reference information, student's worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) Upon completion of this program the student should be able to: define matter, atoms, elements, compounds, and molecules; identify and interpret chemical formulas; list the characteristics of molecules; explain and interpret a graph that shows the movement of molecules from an area of greater concentration to an area of lesser concentration over a specific period of time; define diffusion and passive transport; describe how some molecules pass through selectively

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

permeable membranes; define selectively permeable; explain: why glucose will diffuse through a selectively permeable membrane into a starch suspension; explain how equilibrium is achieved; define osmosis; explain and illustrate osmosis; and compare the process of osmosis with diffusion.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The students must have a general science background.

CONTENT AND STRUCTURE: This package includes one diskette and a comprehensive Teacher's Guide. It is designed for any science curriculum that includes a study of biological systems. Graphics and real-time animated simulations illustrate the processes of diffusion and osmosis. The inquiry approach helps students discover the concepts that are basic to understanding these crucial processes. Students analyze graphs and receive extensive feedback as they learn. Module topics include: Structure of Molecules, Process of Diffusion, Transport through a Membrane, and Equilibrium and Osmosis.

POTENTIAL USES: This program would be best used as a reinforcement for the topics of plant physiology, or osmosis and diffusion. Students need some prior knowledge of chemical symbols!

ESTIMATED STUDENT TIME REQUIRED: 1-2 class periods.

MAJOR STRENGTHS: The use of graphics is outstanding. They are used in a variety of ways and forms. They animate processes, illustrate structures and present problems. A nice feature of the program is that students can set their own pace. The computer simulation of diffusion shows in detail what actually happens.

MAJOR WEAKNESSES: The program does not cover a large amount of information. The basic topics include atoms, molecules, diffusion and osmosis. For the most part, the program is linear with looping back only for the immediate question at hand. It allows no creativity in interacting with the computer.

OTHER COMMENTS: This program would not stand alone well, it needs to be integrated with other instruction.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Personal Energy Inventory

VERSION: Apple, copyright 1983

PRODUCER: HRM Software
175 Tompkins Avenue
Pleasantville, N.Y. 10570

EVALUATION COMPLETED: June 1984 by the staff and constituents of TIES, Roseville, Minnesota.

COST: $39.00

ABILITY LEVEL: Grades 7 through postsecondary
SUBJECT: Sciences, Environmental Education
TOPIC: Energy
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, monitor, and 32K TRS-80, Models III and IV
REQUIRED SOFTWARE: Apple: Applesoft, DOS 3.3; TRS-80: TRSDOS
INSTRUCTIONAL PURPOSE: standard instruction
INSTRUCTIONAL TECHNIQUES: Personal inventory

SCIENCE PROCESSES INVOLVED: Interpreting data, controlling variables, using numbers, observing.
SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, change, model, quantification.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials -- suggested grade/ability level, instructional objectives, program operating instructions, teacher's information, student's instructions, student worksheets.

INSTRUCTIONAL OBJECTIVES: (STATED) To have students learn their own personal energy uses through an inventory. To understand the different types of heating and hot water systems in their own residence. To have an awareness of the large number of specific energy uses in a given day. To understand the differences in energy use among specific appliances. To understand the differences in energy use among other students. To understand how changing one particular item will affect overall energy use.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
			●		Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
		●			Package achieves defined purpose.
			●		Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
			●		Graphics/sound/color are used appropriately.
			●		Use of package is motivational.

SA	A	D	SD	NA	
			●		Student creativity is effectively stimulated.
			●		Feedback is effectively employed.
		●			Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
			●		Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
			●		Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared with its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 1.

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INSTRUCTIONAL PREREQUISITES: Prior instruction on the meaning of the various units of measurement encountered during the inventory.

CONTENT AND STRUCTURE: Students take home a survey form that allows them to audit their own use of energy-consuming appliances, transportation, heat, hot water, air conditioning, light, and so on. They monitor the use for several days, bring in the survey sheets and feed the simply coded data into the school computer each day. They can then use the results to compare their use on different days, to compare their usage with that of others, and to check their usage against national and local averages.

POTENTIAL USES: This package could be used as a pre- or post- activity for an energy unit.

ESTIMATED STUDENT TIME REQUIRED: It will require a few class periods to enter and use the data.

MAJOR STRENGTHS: The concept for the package is very good. The context appears to be relatively accurate. The programming seems to be free of bugs.

MAJOR WEAKNESSES: The design of this package should be redone with the assistance of an instructional designer. The screen displays are poorly designed and far too cluttered. There should be short student directions on the input screens. The feedback about energy consumption and conservation could be incorporated within the package. There is no easy way to "escape" from the program. Also, there is no way to go back to previous screens to edit input. There are too many directions on the "help" screens, and the readability appears very high. Consideration should be given to the possibility of a sub-menu. Reference is made to "HIT" return. Students should not be told to hit keys, perhaps press would be a better word choice. There is not an easy way for teachers to delete or reset local data, they must go through the entire program as a student first. There is not enough room allowed for a long student name. If a long name is entered, the name will wrap around the screen.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Photosynthesis and Light Energy

VERSION: IBM

PRODUCER: Classroom Consortia Media, Inc.
57 Bay Street
Staten Island, NY 10301

EVALUATION COMPLETED: July 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $69.95

ABILITY LEVEL: Grades 8 through post-secondary
SUBJECT: Science
TOPIC: Living Systems
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 128K IBM PC with RGB monitor, or PCjr with composit monitor. A printer is optional. Versions are available for both a dual-sided disk drive or two single-sided disk drives.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Tutorial, simulation.
OTHER FEATURES: Assessment.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information.
SCIENCE CONCEPTS INVOLVED: Organism, cause-effect, change, validation.

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, post-test, teacher's information, resource/reference information, student's instructions, student's worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) Upon completion of this program, the student should be able to: define photosynthesis, list the materials needed for photosynthesis (reactants and products), explain why light is necessary for photosynthesis, explain the need for controls in any experiment, define control

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
			●		Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

and variable, define light, describe the dispersion of light by a prism, explain why different colors of light are either absorbed or reflected, explain why blue and red light are absorbed by chloroplasts, explain why green light is reflected by chloroplasts, describe the growth rate of Euglena under white light, describe the growth rate of Euglena under different colors, and compare the growth rate of Euglena under white light with the growth rate under varying wavelengths.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The students need a general science background.

CONTENT AND STRUCTURE: This package includes one diskette and a comprehensive teacher's guide. It is designed for any science curriculum that includes study of living systems. The inquiry approach is used to investigate the biochemical process of photosynthesis. Animated simulations, challenging activities, and color graphics illustrate the characteristics of light and its role as an energy source. Students see controlled experiments with concise explanations that ensure comprehension. Topics include: Light as Energy for Plants, Variables and Controls, Characteristics of Light, and Wavelengths of Light Used by the Chloroplasts.

POTENTIAL USES: This package could be used in a general science class or biology class as a review or reinforcement of the concepts of photosynthesis and light energy. It could be utilized by individuals or by a teacher for demonstration in a group setting.

ESTIMATED STUDENT TIME REQUIRED: 1-3 class periods.

MAJOR STRENGTHS: The graphics enhance the program. They are very colorful, use a good variety, and are interesting to view. The Help and Review sections are well done and are very reinforcing. The presentation of a variable and control are nicely done. The overall package is very durable and easy to use.

MAJOR WEAKNESSES: Throughout the program, terms are used that are not explained or defined. In section 5, there are new and different terms on the test which were never mentioned or introduced to the user. Due to the terminology used in the program, 5th and 6th graders would probably find the program confusing and difficult. There is a great deal of reading and very little manipulation of variables by the student. The student sees and learns about scientific processes but does not actually use them. There is no way for a teacher to easily monitor what a student is learning from this package.

OTHER COMMENTS: A textbook and direct teaching will do it better and for less cost.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Physical Science Baseball – Chemistry

VERSION: Apple, 1982

PRODUCER:
J & S Software
140 Reid Avenue
Port Washington, NY 11050

EVALUATION COMPLETED: June 1984 by staff and constituents of Jefferson County Public Schools, Lakewood, Colorado.

COST: $29.50

ABILITY LEVEL: Grades 7 through 10
SUBJECT: Sciences
TOPIC: Physical Science
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: DOS 3.3. and Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Drill & practice, game.

DOCUMENTATION AVAILABLE: In supplementary materials — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To increase understanding of definitions and concepts in physical science.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need prior instruction on the objectives stated above.

CONTENT AND STRUCTURE: This package contains one disk and a two page manual. The disk contains a game where the student is asked questions on definitions and concepts in chemistry. The correct answer advances a baseball player to the next base. Wrong anwers are considered an out.

POTENTIAL USES: This program would be suitable only for review.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
				●	Learning can be generalized.
				●	User support materials are comprehensive.
				●	User support materials are effective.
			●		Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree   A-Agree   D-Disagree   SD - Strongly Disagree   NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 2, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

ESTIMATED STUDENT TIME REQUIRED: One game could be played in five minutes if the user answers the questions wrong. Someone who answers the questions correctly could play for hours. The usual time would probably be one class period.

MAJOR STRENGTHS: It is nice for drill and practice.

MAJOR WEAKNESSES: There are no support materials. The packaging is non-existent. The game format is not effective.

OTHER COMMENTS: There is a note indicating a new edition due in July 1984 that will allow the teacher to change the questions, this will enable the teacher to use the package as a test, or as an assessment tool.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Physical Science Programs/Bonding

VERSION: Apple

PRODUCER: J & S Software
140 Reid Avenue
Port Washington, N.Y. 11050

EVALUATION COMPLETED: April 1984 by the staff and constituents of TIES, Roseville, Minnesota.

COST: $29.00

ABILITY LEVEL: Grades 7 through 9
SUBJECT: Sciences
TOPIC: Physical Science, Chemistry
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial

OTHER FEATURES: Content control, reporting function
SCIENCE PROCESSES INVOLVED: Interpreting data, inferring, hypothesizing, formulating models.
SCIENCE CONCEPTS INVOLVED: Quantification, validation, model, energy matter.

DOCUMENTATION AVAILABLE: In program — Program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, program operating instructions, teacher's information, resource/reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To help the students review and learn the main concepts of Bonding.

INSTRUCTIONAL PREREQUISITES: (STATED) Students need prior exposure to the topic of Bonding.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
			●		Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
		●			Learning can be generalized.
			●		User support materials are comprehensive.
			●		User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared with its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package exposes students to a review of Bonding. They are asked questions and if they have difficulty are then given a review of the main ideas in the unit. At the end of the lesson the students are given a score. Each unit requires 30-60 minutes to complete. Student names and grades are stored for teacher use. This unit on Bonding is only one of fourteen physical science programs. The complete set costs $250.00. Also included with each unit is the program CHANGE Question. It allows you to change any of the questions and responses or get a listing of the questions in the program.

POTENTIAL USES: The program could be used as drill & practice and the student must have been previously exposed to the material. This could also serve as a review or self-test as the program provides a great deal of response to incorrect answers.

ESTIMATED STUDENT TIME REQUIRED: Students have the option to work through one to twelve questions, thus time required will vary. To complete 12 questions, the first time through, it would take about 15 minutes.

MAJOR STRENGTHS: The branching on incrorrect answers is excellent. An explanation is given for the first incorrect answer and a second chance at selecting the correct answer is allowed. If the second response is also incorrect, additional information as well as the correct response is provided. Students can exit the program at any point, a score is given as well as the starting point for the student to resume the program at a later date. Teachers have the option of changing questions in the program.

MAJOR WEAKNESSES: The loading of each question is time consuming. The viewing screens, especially the introduction, tends to be cluttered and hard to read. Questions and corresponding picture are on two different screens — it would be better to see the graphics as each question is read. The graphics in Atoms are poor.

OTHER COMMENTS: Some graphic exercises were difficult, an example is counting the number of electrons around the atom.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Physical Science Programs/Radioactivity

VERSION: Apple

PRODUCER: J & S Software
140 Reid Avenue
Port Washington, N.Y. 11050

EVALUATION COMPLETED: June 1984 by the staff and constituents of TIES, Roseville, Minnesota

COST: $29.00

ABILITY LEVEL: Grades 7 through 9
SUBJECT: Sciences
TOPIC: Physical Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial

OTHER FEATURES: Content control, reporting function
SCIENCE PROCESSES INVOLVED: Interpreting data, inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Model, order, validation, energy/matter, field.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, program operating instructions, teacher's information, resource/reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To help students review and learn the main concepts of Radioactivity.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need prior exposure to the topic of Radioactivity.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
		●			Purpose of package is well defined.
		●			Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
				●	Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
			●		Student creativity is effectively stimulated.
●					Feedback is effectively employed.
●					Learner controls rate and sequence.
●					Instruction integrates with prior learning.
●					Learning can be generalized.
			●		User support materials are comprehensive.
			●		User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
●					Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this program to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this program with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This packge exposes students to a review of Radioactivity. They are asked questions and, if they have difficulty, are then given a review of the main ideas in the unit. At the end of the lesson the student is given a score. Each unit requires 30-60 minutes to complete. Student names and grades are stored for teacher use. This unit on Radioactivity is only one out of 14 physical science programs. The complete set costs $250.00. Also included with each unit is the program CHANGE Question. It allows you to change any of the questions and responses or to get a listing of the questions in the program.

POTENTIAL USES: The program would be useful as a testing instrument.

MAJOR STRENGTHS: The ability to change pictures, questions, and answers was cited as a strength by the reviewers. The student management sector is nice to have included, but could be a little more sophisticated.

MAJOR WEAKNESSES: There is a need for a more comprehensive manual, especially in the areas of changing the questions and answers. Also the manual needs to include background to the program and additional activities. When using an Apple IIe you need to undo capslock to rewrite questions, and there is no reference to this.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Physical Science Series

VERSION: Commodore, copyright 1982

PRODUCER: Microphys
1737 West 2nd Street
Brooklyn, NY 11223

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $250.00

ABILITY LEVEL: Grades 7 through 9
SUBJECT: Science
TOPIC: Physical Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Commodore 64, single disk drive, and monitor. Also available for Commodore PET/CBM, Apple II, II Plus, IIe & IIc.
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, inferring, hypothesizing, measuring.
SCIENCE CONCEPTS INVOLVED: Quantification, cause-effect, interaction, validation.

DOCUMENTATION AVAILABLE: In program — student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information, student's instructions, student worksheets, textbook correlation, follow-up activities, materials list.

INSTRUCTIONAL OBJECTIVES: (STATED) Objectives cover a wide variety of concepts in physical science and are stated precisely in the documentation.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The students need prior instruction on the appropriate objective.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package contains two disks, a set of teacher's notes, and student worksheets for each of the 13 physical science lab experiments. The experiment titles are: Volume By Displacement, Density of Solids, Density of Liquids, Density of a Gas, Saturated Solutions, Decomposition of Water, Synthesis of Zinc Chloride, Composition of Compounds I, Composition of Compounds II, Compcunds of Copper and Chlorine, Thermal Expansion of Solids, Thickness of a Thin Sheet, and Oleic Acid Molecule. Students perform the experiment, obtain their data, and produce and analyze their results. The associated computer programs have the following features: 1) In all experiments involving quantitative data, students can readily check their calculations and discover their errors. If difficulty is encountered, detailed computer assistance is displayed on the screen. 2) If students are absent or are unable to complete an experiment, the computer may be directed to randomly generate sets of reasonable data which may then be analyzed as if this data had been obtained during the laboratory investigation. 3) The extensive use of graphics and animation to portray events and equipment serves to add interest to the programs and may be used as either an introduction to, or review of, the particular experimental procedure. 4) Most of the programs enable student groups to feed data and results into the computer which then generates a histogram (bar graph) displaying the array of values entered. If a printer is available, a print-out of the histogram may be generated for each of the various student groups. NOTE: Experiments are coordinated with the Introductory Physical Science (IPS) text published by Prentice-Hall.

POTENTIAL USES: This program would fit into the curriculum of a physical science class. It would be best if the program could be used with actual experiments.

ESTIMATED STUDENT TIME REQUIRED: 20 minutes per experiment.

MAJOR STRENGTHS: The graphics are good and they inhance the program. The visual representations of the experimental procedures are done well. The help section is very informative.

MAJOR WEAKNESSES: The program is very slow. The cost is too high. The feedback to students incorrect responses are poor. When mathematical errors are made by the student, it is very frustrating even with a "help section". The students are limited to what values will be accepted by the program.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Physics Gems, Volume 12

VERSION: Copyright 1983

PRODUCER:
Cross Educational Software
1802 N. Trenton Street
P.O. Box 1536
Ruston, Louisiana 71270

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $35.00

ABILITY LEVEL: Grades 7 through 12
SUBJECT: Sciences
TOPIC: Physics, Chemistry, Mathematics, Astronomy
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II Plus IIe, or IIc, one disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial, simulation, laboratory tool, game
OTHER FEATURES: Reporting function
SCIENCE PROCESSES INVOLVED: Interpreting information, measuring/quantifying
SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, model, quantification, significance, validation, scale.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — Sample program output, program operating instructions, teacher's information.

INSTRUCTIONAL OBJECTIVES: This package covers a wide variety of topics in physics, chemistry, and mathematics.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The student must have received prior instruction on the concepts covered by each program in the package.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●	●			Student creativity is effectively stimulated.
	●	●			Feedback is effectively employed.
	●	●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
		●			User support materials are effective.
		●			Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree   A-Agree   D-Disagree   SD - Strongly Disagree   NA - Not Applicable

Evaluators judged that the cost of the package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: (1 = Low, 5 = High)
Content - 3, Instructonal Characteristics - 3, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: The package consists of one diskette and a manual. The manual provides basic operating instructions, a statement of back-up and copying policy, and a brief description of each program on the diskette, including any special program notes the user may need to operate a particular program. Programs included on the diskette are: PHYSICS — Home Energy (Hourly), Home Energy (Daily), Stopwatch, Two Paddle Timer, Metric Height and Weight, Damped Harmonic Motion, Driven Harmonic Motion, Gravity Equipotentials, Electric Equipotentials, Thermal Expansion; CHEMISTRY — Box of Molecules, Reaction Rates, Finding Absolute Zero, Random Walk, Least Squares Fit; ASTRONOMY — Moon Flight, Weight on the Planets, Gravity Equipotentials, Ellipse, Comet, Retrograde Motion of Mars; MATH — Factorial, Square Root Game, Random Walk, Least Squares, Sine Plot, Inflation, Fourier Synthesis, Fourier Analysis, Square Wave Synthesis; COMPUTER PROGRAMMING — Apple Introduction, Sine Plot, Graph Maker, Text with High Resolution Graphics, Grade Averaging, High Resolution Picture Saver/Getter, Graphics Tutor, Sine Sign, Graph Paper. This is the last volume of a 12 Volume Physics series. Each package in the series is sold separately.

POTENTIAL USES: This package could be used in conjuction with lecture type materials or worksheets. The examples in the program would help to explain possibly complex concepts that might not normally be easily understood.

ESTIMATED STUDENT TIME REQUIRED: 1 1/2 to 2 hours to complete.

MAJOR STRENGTHS: Because of the variety of devices included, the students have many different activities making it motivational to use. The demonstrations and graphics are good. There is good use of the capabilities of the computer, i.e., fast and accurate. Producer has ok'ed and recommends copying each section of the package to increase usability.

MAJOR WEAKNESSES: The package would be better if there were different disks for the various subject areas. The package takes too long to load.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Plant Growth

VERSION: IBM

PRODUCER: Classroom Consortia Media, Inc.
57 Bay Street
Staten Island, NY 10301

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $69.95

ABILITY LEVEL: Grades 5 through post-secondary.
SUBJECT: Science
TOPIC: Plant anatomy
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 128K IBM PC with RGB monitor, or PCjr with composit monitor. A printer is optional. Versions are available for both a dual-sided disk drive or two single-sided disk drives.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Tutorial, simulation.
OTHER FEATURES: Assessment.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information.
SCIENCE CONCEPTS INVOLVED: Cause-effect, organism, change, validation.

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, post-test, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To explore the study of plant anatomy and physiology. Detailed objectives are included in the documentation.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The students need a general science background.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package includes one diskette and a comprehensive Teacher's Guide. It is designed for any science curriculum that includes study of plant anatomy and physiology. Color graphics and simulations illustrate the physiology of growth from seed to plant. Students study hormone control, feedback mechanisms, transport, and differentiation. They interpret graphs and receive extensive drill and practice as they learn. The topics include: Growth, Root Tip of the Plant, Stem Cross Section, Terminal Bud, and Plant Hormones.

POTENTIAL USES: This package could be used as an introduction or reinforcement to plant growth concepts at a high school level.

ESTIMATED STUDENT TIME REQUIRED: 5-10 class periods.

MAJOR STRENGTHS: The presentation is very clear and logical. The graphics enhance the program, they are both instructional and motivational. The final test is well written, and tests on the concepts taught throughout the program. The feedback to a student's repsonses both correct and incorrect are well done. This is a convienent and durable package to use.

MAJOR WEAKNESSES: The age level of the package should be high school biology and up. The vocabulary and graphs are probably too difficult for 5th-8th graders. Also, the program presents too much information in too short a time without developement of those ideas for the junior high age and below. Too much reading. More applications of the learning activities need to be included in the package.

OTHER COMMENTS: A text book and direct teaching will do it better and for less cost.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Plato's Cave

VERSION: Apple II

PRODUCER: Krell Software
1320 Stony Brook Road
Stony Brook, N.Y. 11790

EVALUATION COMPLETED: June 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $49.95

ABILITY LEVEL: Grades 5 through 12
SUBJECT: Sciences, Mathematics
TOPIC: Problem Solving
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II plus, IIe, or IIc, Acorn, Commodore 64, IBM-PC, IBM-PCjr., TRS-80, single disk drive, monitor
REQUIRED SOFTWARE: Apple: Applesoft
INSTRUCTIONAL PURPOSE: Enrichment
INSTRUCTIONAL TECHNIQUES: Simulation, microworld, problem solving
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, model perception, probability.

DOCUMENTATION AVAILABLE: In program — sample program output. In supplementary materials — program operating instructions, student's instrutions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To teach the students to draw logical inferences from experiences.

CONTENT AND STRUCTURE: This package introduces the relationship between evidence and inference. Plato's cave contains an unknown object. The user must determine the contents by interpreting the results of sending in light beams. There are six levels of difficulty available in the package.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
				●	Content is accurate.
				●	Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
				●	Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this packge with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

POTENTIAL USES: This package provides practice in the skill of inference. It also develops observation skills. It can be used by individuals and groups.

ESTIMATED STUDENT TIME REQUIRED: 20 minutes or more

MAJOR STRENGTHS: The program teaches the development of a logical plan of attack. Inference skills are not generally taught, thus this package provides material in an area needed.

MAJOR WEAKNESSES: The visual appeal of the screen display is low. The program is an enhanced version of Hurkle. When using the program, you need to have the manual alongside at all times.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

POLLUTE:
A Simulation of Water Pollution

VERSION: Apple

PRODUCER: Diversified Educational
Enterprises, Inc.
725 Main Street
Lafayette, IN 47901

EVALUATION COMPLETED: June 1984 by the staff and constituents of TIES, Roseville, Minnesota.

COST: $70.00

ABILITY LEVEL: Grades 9 through postsecondary
SUBJECT: Sciences, Environmental Education
TOPIC: Ecology
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, and monitor. Also available for TRS-80 (Models I or II), IBM-PC, and IBM-PCjr.
REQUIRED SOFTWARE: Apple: Dos 3.3 and Applesoft.

INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Simulation, laboratory tool
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information, using the Scientific Method, controlling variables, predicting.
SCIENCE CONCEPTS INVOLVED: Cause-effect, change, equilibrium, interaction, model, system.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials -- suggested grade/ability level, instructional objectives, prerequisite skills/activities, program operating instructions, post-test, teacher's information, resource/reference information, student's instructions, student worksheets, textbook correlation, follow-up activities.

INSTRUCTIONAL OBJECTIVES: After completing the POLLUTE simulation the student will be able to accomplish the following objectives: 1) Given a series of

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
	●				User support materials are effective.
		●			Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this program was unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

statements the students will select the one that best describes the relationship between: a. the level of organic waste and the Biological Oxygen Demand (BOD) of an aquatic ecosystem; b. water temperature and the BOD of an aquatic ecosystem.

INSTRUCTIONAL PREREQUISITES: The students need a knowledge of the types of pollutants and what BOD is. Students should know realistically how many parts/million of pollution might be dumped into a water source in order to use the program effectively.

CONTENT AND STRUCTURE: POLLUTE is a student-interactive simulation which studies the impact of pollutants on the oxygen content and fish life of various bodies of water. The student is directed to study the impact of water temperature, waste type, waste treatment type, rate of waste dumping, and type of body of water on the oxygen content and the survival of fish in the water. It graphically displays the effect of industrial and sewage waste on four different bodies of water in regard to oxygen consumption and temperature. The package also shows the effects of primary and secondary types of treatment, so it could be used when studying about sewage treatment plants.

POTENTIAL USES: The package could be used in Biology, Ecology, or Environmental studies classes to study water pollution.

ESTIMATED STUDENT TIME REQUIRED: It will take students about one hour if subject has been presented ahead of time. Students should be prepared with test data.

MAJOR STRENGTHS: The package effectively shows the effects of pollution and treatment on bodies of water. This would be even more valuable to the students if local data could be tested. The ability to return to previous screens is a nice option.

MAJOR WEAKNESSES: The program is limited in scope to specific objectives. It would be nice if several programs related to the subject were on the disk. It could be more interesting if graphics were effectively used.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Pond Ecology

VERSION: Apple, 1983

PRODUCER: PUBLISHER
Scott Foresman & Co.
Electronic Publishing Division
1900 East Lake Avenue
Glenview, IL 60025

DEVELOPER
Longman Group, Ltd.
Longman Resources Unit
33-35 Tanner Row
York, England Y01 1JP

EVALUATION COMPLETED: July 1984 by the staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $59.95

ABILITY LEVEL: Grades 5 through post-secondary.
SUBJECT: Life Science
TOPIC: Ecology
MEDIUM OF TRANSFER: 5-1/4" disk.

REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Simulation.
SCIENCE PROCESSES INVOLVED: Interpreting information, controlling variables, predicting
SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, change, model, quanitification.

DOCUMENTATION AVAILABLE: In program — program operating instructions, teacher's information, student's instructions. In supplementary materials -- instructional objectives, sample program output, teacher's information, resource/reference information, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide understanding of interrelationships among organisms in a freshwater community and of the variables which effect those interrelationships.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
		●			Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 3.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

INSTRUCTIONAL PREREQUISITES: (STATED) Students should be familiar with the organisms used in the simulation and have been introduced to the concepts and terminology included.

CONTENT AND STRUCTURE: The package consists of two diskettes, a 24-page manual and student leaflets. The program is a simulation of a freshwater community. Students are able to manipulate variables in order to study interactions among various levels of life and man's effect upon them.

POTENTIAL USES: This packet is appropriate for the high school level but for a specific audience. A course in Environmental studies and/or Ecology could devote the time necessary to adequately conduct the activities and computer program. The entire packet would make a nice independent study unit for the "interested" and highly motivated student.

ESTIMATED STUDENT TIME REQUIRED: The supplementary activities could be completed and discussed in 3 to 5 periods. The computer software might take 3 more periods depending upon the number of variables being changed and the number of years the pond study is followed. The instructor should plan to spend 1 hour of prep time for each 1/2 to 1 hour class/computer time.

MAJOR STRENGTHS: The program allows simulation of population dynamics in a pond ecosystem by the use of a simplified model. The software makes use of the computers graphing capabilities with the introduction of different variables. Data generated by the software could be used to create pyramids of numbers for different seasons. Several variables can be manipulated in the program (# of fisherman, # of fish caught, closed and open seasons, pollution), although the teacher would need to discuss the idea of "controls" in the experiments for this to be helpful.

MAJOR WEAKNESSES: Some of the programming key words are long (i.e. "continue could be keyed to "C", Help to "H", etc.) Activity A requires live materials, Daphnia and chlorella. It is difficult to compare data when the numbers are changed. It would be nice if the second graph chould show over the first graph. The scale of the graph is very small making it difficult to interpret data, and they are not very motivating to watch. The graphic displays should be faster, followed by questions to test comprehension. The average biology student would lose interest in this program easily.

There is not enough background information available in the program.

OTHER COMMENTS: The software does not stand on its own. It is not a tutorial and is not appropriate at the introductory Biology level. An option for print-outs would also be a nice addition to the program.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Power Grid

VERSION: Apple, copyright 1983

PRODUCER: HRM Software
175 Tompkins Avenue
Pleasantville, N.Y. 10570

EVALUATION COMPLETED: June 1984 by the staff and constituents of TIES, Roseville, Minnesota

COST: $59.00

ABILITY LEVEL: Grades 7 through 12
SUBJECT: Sciences
TOPIC: Energy
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus IIe, or IIc, single disk drive, monitor, and 32K TRS-80, Models III and IV
REQUIRED SOFTWARE: Apple: Applesoft, DOS 3.3, TRS-80: TRSDOS
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving

SCIENCE PROCESSES INVOLVED: Interpreting information, inferring, hypothesizing, measuring.
SCIENCE CONCEPTS INVOLVED: Quantification, cause-effect, interaction, change, model.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To know the different methods used to produce electricity. To understand the advantages and disadvantages of each method of producing power. To understand the complexities of supplying power to consumers. To understand principals of supply and demand. To understand the consequences of over and under production of electricity. To understand the variations in power demand throughout the day as well as in different seasons.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need prior introducton to the concepts listed above.

CONTENT AND STRUCTURE: This program offers a complex simulation of an electric utility, drawing its resources from a number of plants fueled by coal, oil, gas, nuclear power, and water power. A student, or a group of students working as a team, acts as the power grid engineer, making decisions to meet the anticipated demand for electricity of a given day. The engineer must factor in the cost of each fuel, the temperature and other climatic conditions, trade-offs in safety and plant breakdown, and the availability of purchasable power from private sources. Unscheduled breakdowns occur. The engineer wins points for estimating need and corresponding production correctly and cost-effectively.

POTENTIAL USES: Students explore relationships between types of power available to run a city power plant — this could be used during a unit on energy consumption. The program is best used in small groups and students should run through a cycle at least twice. The first time through, students are learning to read graphs and operate the control boards, while the second time they can concentrate on the power problem.

ESTIMATED STUDENT TIME REQUIRED: Students will need 30 minutes to learn the package. It will take about 45 minutes for a small group to run through a cycle — allowing some time for discussion. Additional time in class is needed for discussion after all students have run through the simulation.

MAJOR STRENGTHS: The data sheets provided for student comparison are useful. Students immediately view results of their decisions on the computer screen. Decisions are made after students read the graphs and do a comparison of data. They are also forced to do some long range planning, for they must scan ahead in order to turn on the plants in time to ready them for production and must deal with emergency breakdowns. Students can use the program several times and at different levels of difficulty.

MAJOR WEAKNESSES: Further instructions are needed. The first time through is trial and error. The package is more appropriate for high school students than junior high. The control board screen is very busy and searching for the commands at the bottom of the screen is tiring. If you do not respond with a Y/N, the control board appears again with plant options; this is confusing.

OTHER COMMENTS: It would be helpful to have a preview run in the beginning of the program, then the students could learn to run the plant without taking so much time going through an entire cycle. A follow up discussion should be held with the entire class to compare the results and discuss some of the consequences. Students need information on the consequences of their actions.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Problem Solving Strategies

VERSION: Apple, copyright 1984

PRODUCER: MECC
3490 Lexington Ave. North
St. Paul, MN 55112

EVALUATION COMPLETED: May 1984 by the staff and constituents of Institute for Educational Research, Glenn Ellyn, Illinois.

COST: $48.00

ABILITY LEVEL: Grades 5 through 9
SUBJECT: Mathematics
TOPIC: Problem Solving
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus, IIe, or IIc, single disk drive, and color monitor (color is needed for the last program)
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Tutorial, problem solving

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, decision making, measuring/quantifying.
SCIENCE CONCEPTS INVOLVED: Perception, systems, change, interaction, model.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, post-test, teacher's informatin, resource/reference informaton, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To identify three problem solving strategies: Trial and Error, Exhaustive Listing, and Simplifying the Problem; state advantages and disadvantages of using these problem solving strategies; demonstrate the application of these strategies to the problem of diagonals in a dodecagon;

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
		●			Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 3.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

complete a table of data accurately; identify patterns in number sequences; classify figures as dodecagons; apply these strategies to the problem of finding the squares in a grid; apply Trial and Error to a complex problem; relate strategies learned in a simplified case to a complicated situation; estimate the results of multiplication; apply a variety of strategies to a complex problem situation; collect data on a chart; find patterns in data; predict outcomes based on discovered patterns; use a simple case to generalize about a more complex case.

INSTRUCTIONAL PREREQUISITES: (STATED) The students should be at a seventh grade reading level.

CONTENT AND STRUCTURE: This package contains a users disk, backup disk, and a 75-page support manual. Two interactive tutorials, DIAGONALS and SQUARES, teach students the strategies of Trial and Error, Exhaustive Listing, and Simplifying the Problem. Students collect data, create charts, find patterns, and make generalizations as they apply these strategies to the graphically presented puzzle problems. Two other innovative programs challenge students to apply the strategies to more complex, open-ended problems. In THINKING WITH INK, students compete for the lowest possible cost by coloring a pattern of rectangles. In POOLING AROUND, students discover rules to predict the behavior of a ball by analyzing data they collect from a simulation of a simplified pool table. The support manual contains extensive student handouts for all four programs, as well as suggestions for classroom use and detailed program previews.

POTENTIAL USES: This package could be used in a math class to promote thinking and problem solving skills.

ESTIMATED STUDENT TIME REQUIRED: 20-30 minutes each part.

MAJOR STRENGTHS: This package is challenging, motivating, and does a nice job holding your interest. The teacher support materials are good. Patterns can be seen from the data. It is a good practice program for developing skill and overcoming math anxiety. It should help develop spacial relationship in girls.

MAJOR WEAKNESSES: The program is math oriented — the concepts may be too difficult for a student with a poor math background. The problems are not based on real-life situations. It is possible for students to go through the entire package without applying any learned information.

OTHER COMMENTS: The package could be used in a science class but would require additional teacher guidance to make the transition from math to science concepts.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Protozoa

VERSION: Apple

PRODUCER: Ventura Educational Systems
3440 Brokenhill Street
Newbury Park, CA 91320

EVALUATION COMPLETED: October 1984 by the staff and constituents of the Northwest Regional Educational Laboratory.

COST: $39.95

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Sciences
TOPIC: Biology, Life Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II Family, single disk drive, color monitor
REQUIRED SOFTWARE: DOS 3.3, Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment.
INSTRUCTIONAL TECHNIQUES: Drill and practice, tutorial, game, and information retrieval.
SCIENCE PROCESSES INVOLVED: Interpreting data.

SCIENCE CONCEPTS INVOLVED: Organism, model, and order.

DOCUMENTATION AVAILABLE: In Program — Student's instructions, teacher's information, and post-test. In Supplementary Material — Suggested grade/ability level, progam operating instructions, student's instructions, student worksheets, and follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide drill and practice identifying microstructures of single celled animals. To provide information on the parts of the microscope. To provide information on plasmodia and malaria cycle.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The student must have some prior instruction on single celled organisms and be familiar with the associated terminology.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
			●		Information displays are effective.
			●		Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is not reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made. (Note changes under weaknesses or other comments.)

Summary: Scale 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package contains one disk and a Users Guide. Protozoa is a learning system which presents data on four representative organisms in the protozoa phylum. The user practices identifying the spelling the microstructures found in Amoeba, Euglena and Paramecium. The system also includes a special unit on Plasmodia and the Malaria Cycle. The educational software package includes a data base describing the cellular parts and their functions, a Data Retrieval Utility for accessing information, a Quiz Machine which presents a multiple choice quiz and a special Microscope Study Unit, which gives detailed information about how to operate a microscope. A Teacher's Guide section includes lesson plans, a lab guide, and student worksheets.

POTENTIAL USES: This package could be used with individual students in a high school biology class to review single celled animals and the stages of the malaria cycle. It could also be used to study the parts of a microscope.

ESTIMATED STUDENT TIME REQUIRED: 15 to 20 minutes for 2 to 3 days.

MAJOR STRENGTHS: The reviewers liked how the program collected the words missed on the quiz and fed them back to the user. Feedback information is very accessible and thorough.

MAJOR WEAKNESSES: This package would be too difficult for 7th grade students. A more appropriate target audience is ninth grade and above. The materials do not include comparative anatomical systems. The manual contained no explanation for this. The drawings are difficult to read. Sometimes it is hard to tell what is being indicated for identification. There is some animation available, but it does not facilitate the instruction. The support materials lack a compilation of the materials covered in the program. The user must be familiar with the information in the support materials inorder to operate the program.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Robot Odyssey I

VERSION: Apple

PRODUCER: The Learning Company
545 Middlefield, Suite 170
Menlo Park, CA 94025

EVALUATION COMPLETED: November 1984 by the staff and constituents of the Northwest Regional Educational Laboratory, Portland, Oregon

COST: $49.95

ABILITY LEVEL: Grades 8 through post-secondary
SUBJECT: Sciences
TOPIC: Problem solving; Chip/Robot Design
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II Family, 64K, color monitor
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Microworld, game, problem solving
SCIENCE PROCESSES INVOLVED: Observing, predicting, interpreting data, hypothesizing
SCIENCE CONCEPTS INVOLVED: Model, system

DOCUMENTATION AVAILABLE: In Program — program operating instructions, student's instructions. In Supplementary Material — suggested grade/ability level, sample program output, program operating instructions, student's instructions, student worksheets.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To learn fundamentals of digital logic, circuit and chip design. To practice problem-solving skills: defining the problem, breaking a problem into manageable tasks, looking for multiple solutions, testing and analyzing a solution.

INSTRUCTIONAL PREREQUISITES: Prior experience with the package entitled "Rocky's Boots" by the same company would be helpful but is not a necessary condition for use.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
●					Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
●					Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators strongly agreed that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale 5 (High) to 1 (Low)
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: The package contains one double-sided disk and a 47 page User's Manual. There are two worlds in the Odyssey to explore: Robotropolis, an underground city populated by robots, and the Innovation Lab, a robot workshop. In addition there are three Robot Tutorials on the disk that explain about life in the Odyssey, including how robots work.

In Robotropolis, the user journeys through the underground metropolis seeking a way out. The only way to escape and return to civilization is to program robots. There are several levels to travel up, and each has obstacles that require different types of robots.

In the Innovation Lab, the user tinkers with robots to create projects. Here, there are three programmable robots to use for experimentation, a robot tool kit, and a maze area for investigating robot mobility.

The Robot Tutorials explain how to program robots. The user begins this three-part course with Robot Anatomy, then goes to Toolkit, and finally explores Chip Design.

POTENTIAL USES: Useful in computer science, electronics, physics, and general science classes. After running through the tutorials as individuals or as a class, students can work in small groups solving problems in the Innovations Lab. The ability to save existing "runs" makes the program useful for on-going problem-solving work. It would also be useful in developing cause-effect and spacial relationships.

ESTIMATED STUDENT TIME REQUIRED: Each tutorial requires 30-45 minutes. Time in the Innovations Lab will vary; it depends on how quickly the robots can be programmed—probably more than 1 period for most students. The Robotropolis Adventure will take many hours.

MAJOR STRENGTHS: This program provides numerous, excellent problem-solving situations. The program is very motivational; once started, it's hard to quit. The program is easy to use and can be used by students of different ability levels with most finding success. The program operates at all levels of Bloom's Taxonomy. The save feature makes it possible for teachers to create situations that reinforce specific concepts.

MAJOR WEAKNESSES: The program's complexity may be overwhelming or frustrating to non-mechanically minded, particularly if the games are attempted prior to completing the tutorials.

OTHER COMMENTS: It is fun.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Rocky's Boots

VERSION: Apple

PRODUCER: The Learning Company
4370 Alpine Road
Portola Valley, CA. 94025

EVALUATION COMPLETED: July 1984 by the staff and constituents of The Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $49.95

ABILITY LEVEL: Grades 3 through post-secondary
SUBJECT: Science
TOPIC: Logic, Electronics
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II plus, IIe, or IIc, single disk drive, color monitor, and joystick (optional).
Also available for IBM PC and PCJr from IBM, and Commodore 64
INSTRUCTIONAL PURPOSE: Enrichment
INSTRUCTIONAL TECHNIQUES: Tutorial, simulation, game, problem solving.

SCIENCE PROCESSES INVOLVED: Acquiring information, decision making. inferring, hypothesizing, controlling variables.

SCIENCE CONCEPTS INVOLVED: Cause-effect, change, force, interaction, system.

DOCUMENTATION AVAILABLE: In program — Sample program output, program operating instructions, student's instructions. In supplementary materials — Suggested grade/ability level, instructional objectives, program operating instructions, student's instructions, glossary, map of Rocky's challenge.

INSTRUCTIONAL OBJECTIVES: (STATED) To identify various gates and describe their functions. To create simple electronic machines, using wires and gates.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need familiarity with the keyboard and coordination of eye/hand movement to allow precise movement of objects on the screen, using the keyboard or a joystick. They will also need an adequate reading level to comprehend the instructions.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 4.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package contains a sequence of six colorful graphics programs. Four of the programs teach the skills needed to play the two games, one more advanced than the other. In the games the student builds simple, animated machines using wires and logic gates, which select certain targets that score points. The package includes a feature where the student can save a game for later completion. It also provides a "make your own game" room where the teacher can taylor the package to meet individual needs.

POTENTIAL USES: This package could be used in computer literacy classes, mathematics classes studying a formal logic or Venn diagrams, a science unit on electricity/electronics, in gifted student programs stressing analysis and synthesis, in units on creative thinking, to demonstrate cause and effect, and as an enrichment activity for any class. The package is also useful for developing spacial relationships and mechanical skills in girls. It could be used on an individual basis or in small groups.

ESTIMATED STUDENT TIME REQUIRED: Each tutorial program will probably take a student 10 to 15 minutes minimum. The games would require 15 to 30 minutes minimum and are addictive. The amount of time required to complete the package can be greatly reduced by covering the tutorials with the entire class in a demonstration mode using a large monitor.

MAJOR STRENGTHS: The package encourages and strengthens analytical, synthetic, and creative thinking skills. It allows and encourages divergent thinking by enabling students to experiment in making machines. The program has a high degree of student control. The movement of graphic elements is precise and movement directions are excellent. The student has many choices and can always change things. The ESC key is used to exit program, to return to the menu, or to the previous screen. Clear, step-by-step instructions are part of each program. It is an exciting use of the computer to simulate electronic circuits. It enables students to have an experience that would be virtually impossible without the computer. It is a highly motivational activity, addictive in the same way video games are to some young people. It is technically excellent; the programs themselves are extremely creative. It uses the capabilities of the Apple II to their fullest. The graphics are extremely diverse and motivating, and the color is very good. The program is useful with a wide range of age levels and includes a wide range of challenges. The ability to make your own games and save games to the disk increases the usefulness of this package.

MAJOR WEAKNESSES: It is color dependent. The electricity is orange and is not visible on a black and white monitor, making the program impossible to understand on a black and white monitor. It requires a commitment of time and concentration on the part of the student to learn the skills before playing the games. The instructions are long and detailed, but generally clear. There is a lot for the student to learn. A younger child (7-8 years old) would have trouble getting through the entire disk without teacher assistance. The instructions for the first game are not totally clear from the documentation or screen. The programs sometimes ask questions on the screen without allowing a typed response. (But the student can see the answer by watching the animated objects on the screen.) Follow-up discussion topics or references and other related activities would enhance the package. The explanation pamphlet is helpful but a general background explanation at the beginning would be useful in getting started.

OTHER COMMENTS: The vocabulary may be a problem for some students (e.g., oscillator). CTRL-G controls the sound being on or off. It is not possible to pick up two objects which are on top of each other. The package is good for a child who is bright but easily distracted.
A repackaging of Rocky's Boots is available through Addison Wesley which includes the same disk as the home version and extensive support materials for use by teachers and students.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Scales

VERSION: Apple, 1981

PRODUCER: PUBLISHER
Scott-Foresman & Co.
Electronic Publishing Division
1900 East Lake Avenue
Glenview, IL 60025

DEVELOPER
Heinemann Computers in Education Ltd.
22 Bedford Square
London, England WC1B 3HH

EVALUATION COMPLETED: July 1984 by the staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $59.95

ABILITY LEVEL: Grades 6 through post-secondary.
SUBJECT: Sciences, Mathematics
TOPIC: Measurement
MEDIUM OF TRANSFER: 5-1/4" disk.

REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial.
SCIENCE PROCESSES INVOLVED: Measuring, controlling variables, predicting.
SCIENCE CONCEPTS INVOLVED: Quantification, scale, significance.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — prerequisite skills/activities, sample program output, program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide practice in reading seven different measuring devices.

INSTRUCTIONAL PREREQUISITES: (STATED) Students should have seen each of the seven devices in actual use and be aware of the appropriate measure units for each device.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree   A-Agree   D-Disagree   SD - Strongly Disagree   NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: The package consists of two diskettes and an 11-page manual. The program generates readings on: a thermometer, a measuring cylinder, a burette, an ammeter, a stop-watch, a vernier, and a micrometer screw gauge. Students provide a numerical reading for the device shown using the proper number of significant figures. Feedback for incorrect answers includes the correct answer and method to obtain it.

POTENTIAL USES: The program would be especially useful in a first year chemistry class or any class where students are reading an instrument for the first time. When introducing a device to the class, this program would be very helpful in a demonstration or lecture, but students must be close enough to read the scales on the screen clearly. After the teacher uses the program as a demonstration tool, individual students or small groups could make good use of the program.

ESTIMATED STUDENT TIME REQUIRED: Five to fifteen minutes would be needed for each of the seven scales. Time is also needed for teacher explanation on each type of scale.

MAJOR STRENGTHS: The scales are clearly drawn using hi-res graphics, which makes measurement easier. The program uses the concept of significant digits in reading the scales. If an incorrect reading is entered by the student, the correct value is displayed with the scale still visible.

MAJOR WEAKNESSES: The feedback to the students is poor. It would be better if an incorrect response were followed with "too high" or "too low" and the student was given a second chance before reporting the correct value. When an answer is 13 the input must be 13.0. This is confusing to some students. It would be nice to have a "help" section to cover possible errors such as this.

No branching upon either failure or mastery occurs in the program. There are no real student-oriented objectives.

It would be helpful to see the whole tool being read at some time. The program could be more interesting with actual scales! The score is displayed as a graph, but this is not very interesting graphics for a computer! It would also be more motivating to have some sound, even if it was liquid filling the cylinders.

OTHER COMMENTS: Better teacher documentation and duplication-ready handouts would be great!

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Science Challenges

VERSION: Commodore 64

PRODUCER: Micro Ed, inc.
P.O. Box 444005
Eden Prarie, MN. 55344

EVALUATION COMPLETED: June 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $34.95

ABILITY LEVEL: Grades 3 through 10
SUBJECT: Science
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Commodore 64, single disk drive, and monitor.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Game, problem solving.
SCIENCE PROCESSES INVOLVED: Acquiring information, using the Scientific Method, estimating, inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, quantification.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information, resource/reference information.

INSTRUCTIONAL OBJECTIVES: (STATED) To investigate the principles of radar, irrigation, electricity, and geology.

CONTENT AND STRUCTURE: This package consists of one diskette and a documentation sheet. These programs, TORPEDO ALLEY, EARTHQUAKE, ALFALFA MILLIONAIRE, and LIGHT FIVE, cover a variety of science subjects in an interesting and game-like way.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
		●			Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

The program TORPEDO ALLEY covers the concept of radar. The learner will use it to find and destroy a mine field to clear a path for your submarine.

The program EARTHQUAKES introduces the process of finding the surface origins of various earthquakes. The learner will use different shock waves produced by the earthquakes and different locations to achieve this goal.

Estimating and scientific method will be used in ALFALFA MILLIONAIRE to irrigate a field of crops over a ten year period.

Finally, in LIGHT FIVE, the learner will gain an understanding of the relationship between volts, amperes, and ohms. These three variables can be changed in many ways to serve a variety of uses. The objective is to light five lights as quickly as possible using knowledge of electricity.

This package of four programs is not a series, each program was developed independently.

POTENTIAL USES: There are four seperate activities, each will have a slightly different use in the classroom. They could be effectively used by individuals or small groups as drill and practice especially in the junior high age level or upper elementary grades. The programs could be useful to introduce the respective topics.

ESTIMATED STUDENT TIME REQUIRED: Each of the four activities would take about 20-40 minutes.

MAJOR STRENGTHS: The graphics are simple and clear. They illustrate and help clarify the material presented. "Earthquake" is a good drill and practice activity, but the topic of finding earthquake epicenters and the idea of intersecting, must have been previously taught for the students to be successful.

MAJOR WEAKNESSES: This package has no unifying factor and each activity is suitable for a very different grade level. The section dealing with radar does a poor job. "Alfafa Millionaire" would be a "cute" guessing game for the older students without any real educational value. "Torpedo Alley" does not use enough variety of the numbers in the problems. The presentations of the formulas could be confusing depending on the user's math background.

OTHER COMMENTS: "Light 5" would fit into upper elementary curriculum. "Earthquake" is best used at a junior high level. "Torpedo Alley" target area should be 5th through 8th. "Alfafa Millionaire" would be appropriate for 3rd and 4th grades.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

This report made possible by a grant from SOHIO Corporate Contributions.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE courseware.

Sem Calc: The Word Problem Solver

VERSION: TRS-80

PRODUCER: Sunburst Communications
39 Washington Avenue,
Suite RMS
Pleasantville, NY 10570

EVALUATION COMPLETED: July 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $95.00

ABILITY LEVEL: Grades 6 through 12
SUBJECT: Math
TOPIC: Problem solving
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K TRS-80, single disk drive, and monitor. Also available for 48K Apple II and Atari 800.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, problem solving.

SCIENCE PROCESSES INVOLVED: Organizing information, using numbers, controlling variables.
SCIENCE CONCEPTS INVOLVED: Quantification, scale.

DOCUMENTATION AVAILABLE: In program — sample program output, program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information, resource/reference information, student's instructions, textbook worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To help students solve story problems.

INSTRUCTIONAL PREREQUISITES: The students need an understanding of the four basic mathematic operations.

CONTENT AND STRUCTURE: This package includes one diskette with tutorial, backup, and Teacher's Guide. SEMCALC helps students solve word problems by focusing on the units rather than the numbers. Correlated for use with 27

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
				●	Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
●					Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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textbooks, this teaching tool helps students avoid inappropriate calculations by: stopping them from processing incompatible units; helping them convert to common units; leading them through the steps of making conversions between related units; and using "unit awareness" to help students determine the correct operation.

SEMCALC keeps notes on the processes that go into each computation. Thus the student can see how an answer was reached and whether or not the units involved were renamed or converted. Users can also add their own notes for future reference, or can request help at any time from a built-in tutorial.

POTENTIAL USES: This package would work nicely as an introduction to a story problem unit in mathematics. It could be used with individual students, in small groups, or as a demonstration tool for a class discussion or lecture.

ESTIMATED STUDENT TIME REQUIRED: From 10-30 minutes per student or group of students.

MAJOR STRENGTHS: It is very easy to move through the program. The user can easily scroll the text forward or backward using the and keys. The program enables the user to input data from their own problem allowing the computer to be used as a tool. A 'help' function is available at almost any time.

MAJOR WEAKNESSES: The content is very limited for the price you pay for the package. The package is not very motivational and would not hold the student's attention for more than a few minutes. There is little use of graphics.

OTHER COMMENTS: Semantic Calculator should be demonstrated to the student(s) prior to using the program in order to insure proper understanding of the concept.

A video tape on the use of this package is available from Sunburst Communications. The tape is intended for the teacher wishing to learn how to use the package but would be inappropriate for use with students.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Simple Machines

VERSION: Commodore 64

PRODUCER: Micro Ed, Inc.
PO Box 444005
Eden Prairie, MN 55344

EVALUATION COMPLETED: October 1984 by the staff and constituents of the Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $34.95

ABILITY LEVEL: Grades 3 through 9
SUBJECT: Science
TOPIC: Physical Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Commodore 64, single disk drive, and monitor
REQUIRED SOFTWARE: None
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial and problem solving.

SCIENCE PROCESSES INVOLVED: Interpreting data.

SCIENCE CONCEPTS INVOLVED: Cause-effect, force, quantification.

DOCUMENTATION AVAILABLE: In Program — program operating instructions, student's instructions. In Supplementary Materials — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information.

INSTRUCTIONAL OBJECTIVES: (STATED) To show the function of first, second, and third class levers and how they can be used.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need prior instruction and introduction to the three classes of levers, the inclined plane and the relationship between resistance, effort and the location of the fulcrum.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
●					Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

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300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package consists of one diskette and a documentation sheet. "Balance Beam", "Bull's-eye", "Direct Hit", and "Block Stacker" deal with the three classes of levers and the inclined plane.

First, second, and third class levers are used by all of us almost every day in one form or another. These programs will show the funtion of each of these levers and how they can be used. All of the levers have three things in common. Each has resistance or weight, an effort, and fulcrum or pivoting point. The difference between the levers is shown as the difference in the location of each of the three variables. The programs are highlighted by interesting graphics, animation, and sound.

The final program shows the inclined plane in the form of a set of steps. The learner will use these steps to carry blocks to the platform on top. The height of the platform and weight of each block will vary, and the learner's job will be to find the amount of work needed to carry each block. The principle of work will be explained in a very interesting and informative fashion.

POTENTIAL USES: This program could be used with a large group as an introduction to levers, or to provide drill and practice for individuals following a lesson on levers. It could also be used as an example of ratios in a math class.

ESTIMATED STUDENT TIME REQUIRED: Each program requires 10 to 15 minutes to go through the first time. There are a couple of questions that are a little tricky to understand which may slow some students.

MAJOR STRENGTHS: This program provides a good description of the three classes of levers. The purpose of the package is clearly stated in the program and in the documentation. The relationship between distance from the fulcrum and effort is well done. The graphics for rewarding a correct answer is well done. The flow of the program is controlled entirely by the user.

MAJOR WEAKNESSES: The missing element in this package is how these levers are used. Examples like wheelbarrows, shovels, crowbars, etc. are needed. The reviewers felt that the program does show the user how to calculate loads, but it might be more effective to show a comparison of the three levers in handling the same load. The spatial relationship of distance and work in "Block Stacker" is not clear. Elementary children need to see the distance change when the numbers change. The producer indicates that the package may be used as early as third grade. The programs entitled "Balance Beam" and "Bull's Eye" require an understanding of fractions which makes them too difficult for that level.

OTHER COMMENTS: If used as a math exercise, other examples of ratios could be brought in when these programs have been run.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Sky Travel

VERSION: Commodore 64

PRODUCER: Commodore Educational Software
1200 Wilson Drive
West Chester, PA 19380

EVALUATION COMPLETED: November 1984 by the staff and constituents of the Northwest Regional Educational Laboratory, Portland, Oregon.

COST: Varies

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Science
TOPIC: Astronomy
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Commodore 64, disk drive, monitor (color preferred), printer (optional)
BACK-UP POLICY: Replacement disk-$5.00
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Simulation, laboratory tool
SCIENCE PROCESSES INVOLVED: Interpreting data

SCIENCE CONCEPTS INVOLVED: System, model, time-space

DOCUMENTATION AVAILABLE: In Program — Program operating instructions, student's instructions, follow-up activities. In Supplementary Material — Suggested grade/ability level, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To learn the location of celestial bodies in our galaxy. To explore relationships between historical and astronomical events. To view distance and location relationships between celestial bodies.

INSTRUCTIONAL PREREQUISITES: None stated.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Summary: Scale 5 (High) to 1 (Low).
Content - 5, Instructional Characterisitcs - 5, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 9720
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: The package contains one disk and a 138 page manual. The program is like a pictorial data base that can double as a planetarium. Star maps and general information is available for the planets, sun, moon and 1200 stars in the galaxy. A night sky from any location and time in history (or future) can be displayed. The manual outlines several exercises/explorations for the user, this includes: telescope, phases of the moon, eclipses, the "Jupiter Effect", Halley's Comet, star of Bethlehem, navigation, and many more.

POTENTIAL USES: This program is useful for classroom demonstrations on a large color monitor or for individual and small group work. The program has applications in astronomy, physics, history, archeology, geography, and navigation. It can be used effectively in grades 7 and up.

ESTIMATED STUDENT TIME REQUIRED: As little or as long as you choose. Most of the exercises provided require 15 - 30 minutes. It will take one period to demonstrate the program operation to a class.

MAJOR STRENGTHS: This package is very versatile, containing a wealth of information in the program and in the accompanying manual. The program allows the user to explore the heavens from any location, any viewing angle, any direction (N, S, E, W), and from any point in time. The graphics are great and the program is very user friendly! The directions and the screen displays are well laid out and easy to follow. There are a lot of functions to remember but the documentation provides good support.

MAJOR WEAKNESSES: Parts of the program are slow to load. The print option is useful but is very slow. There is no method to abort out of a print option short of turning the printer off.

OTHER COMMENTS: This is an excellent program.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Star Search

VERSION: Apple

PRODUCER: Earthware Computer Services
P.O. Box 300 39
Eugene, OR 97403

EVALUATION COMPLETED: July 1984 by the staff and constituents of Jefferson County Public Schools, Lakewood, Colorado.

COST:

ABILITY LEVEL: Grades 6 through post-secondary
SUBJECT: Science
TOPIC: Astronomy
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, one or two disk drives, and monitor
REQUIRED SOFTWARE: Applesoft and DOS 3.3 (RAM disk necessary for Apple II).
INSTRUCTIONAL PURPOSE: Enrichment.
INSTRUCTIONAL TECHNIQUES: Game.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Time-Space, system, scale

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, program operating instructions, teacher's information, resource/reference information, glossary.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide practice in interpreting scientific information. To provide information on the types, mass, temperatures, and atmospheres of the planets in our solar system. To provide information on the relationship between the location of a planet in relation to the central "star" and its temperature and the effect this has on life forms.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
			●		Feedback is effectively employed.
		●			Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need to be reading at sixth grade level or above. Some prior instruction on planets, the solar system and space travel is needed.

CONTENT AND STRUCTURE: The package consists of one program diskette, back-up diskette, and a manual. STAR SEARCH is designed for use by one to four players or teams. The players are to assume the roles of Captains of ships in a fleet, sent out from the main base for interstellar expeditions on the planet Pluto. The fleet will have the same number of ships as there are players or "Captains". The assignment is to travel to, explore, and return from a distant planetary system. The highest priority in this expedition is to assure the SAFE RETURN of the fleet and all crew members. The next highest priority is to discover extra terresterial life forms and, if possible, communicate with them. Third priority is to gain reasonably comprehensive information about the characteristics of the targeted system. Strategy and tactics to fulfill these aims in part are the joint-decisions of all the Captains, in part by individual Captains. Captains have diverse sources of information and (simulated) remote-sensing devices to assist them in these tasks. The game ends when an essential resource for one or more ships is depleted to such a level that the margin for safe return to Pluto Base in threatened, or when twenty turns have elapsed.

POTENTIAL USES: This package could be used for enrichment, review or with computer club. Small teams (2-4 students) work best.

ESTIMATED STUDENT TIME REQUIRED: Eight plus hours are necessary on just the first level.

MAJOR STRENGTHS: The game is elaborate and motivational: it makes good use of graphics and requires creative thinking. For the interested student, the program is a tool for learning about possible careers, equipment, vocabulary, and problem solving skills. The method of exploration and the results are good.

MAJOR WEAKNESSES: The excessive time required severely limits the program's classroom use. It is too complicated for 7th and 8th graders. The program has inadequate feedback for the choice of professions made by students. The relationship between the profession of a crew and his/her ability to analyze the data from each investigation is never explained. Certain operating terminology (the "standard" key) is not fully explained.

OTHER COMMENTS: This has potential as a game with educational value but it is not an education program in game format.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE courseware.

Stellar Astronomy

VERSION: Apple

PRODUCER: Cross Educational Systems
1802 N. Trenton Street
P.O. Box 1536
Ruston, Louisiana 71270

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $30.00

ABILITY LEVEL: Grades 7 through 12
SUBJECT: Science
TOPIC: Astronomy
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II+ or IIe, single disk drive, and monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial and simulation.
SCIENCE PROCESSES INVOLVED: Acquiring information and interpreting information.

SCIENCE CONCEPTS INVOLVED: Fundamental entities, theory
DOCUMENTATION AVAILABLE: In Program — program operating instructions, student's instructions. In Supplementary Material — suggested grade/ability level, instructional objectives, prerequisite skills/activities, teacher's information, textbook correlation.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To develop astronomy concepts.
INSTRUCTIONAL PREREQUISITES: (INFERRED) This package assumes some prior knowledge of astronony

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
●					Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
				●	Content is free of stereotypes.
		●			Purpose of package is well defined.
	●	●			Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: The program includes lessons on: constellations, sirius & the white dwarft, doppler effect, types of stars, death of a star galaxies, cosmology I and cosmology II. Types of Stars draws a diagram and explains main sequence of stars, novas and super novas, white dwarfs, red giants, blue giants, and variable stars. Cosmology I discusses physical theories for the origin of the universe and Cosmology II explores other philosophical possibilities.
The Documentation describes individual programs and organization for programmers who would like to change programs.

POTENTIAL USE: The package could be used for classroom demonstration, review, and enrichment. The programs titled Constellations, Sirius, and Death of A Star are appropriate for 8th grade. The others are useful for enrichment, gifted students, or high school level.

ESTIMATED STUDENT TIME REQUIRED: 45 minutes for demonstration or quiz on constellations. 200 minutes for individual use and enrichment.

MAJOR STRENGTHS: The program helps to demonstrate concepts that are difficult to show or explain. The programs are accessible; it is easy to move from one lesson to the next.

MAJOR WEAKNESSES: In some of the lessons there is a lot of screen text to read. The documentation is weak; it assumes "computer familiar" users.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Temperature Grapher

VERSION: Copyright 1983 - Apple

PRODUCER: HRM Software
175 Tompkins Avenue
Pleasantville, N.Y. 10570

EVALUATION COMPLETED: June 1984 by the staff and constituents of TIES, Roseville, Minnesota.

COST: $75.00

ABILITY LEVEL: Grades 7 through 12
SUBJECT: Sciences
TOPIC: Chemistry, Physics, Biology, General Science.
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, II Plus or IIe, single disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Enrichment
INSTRUCTIONAL TECHNIQUES: Laboratory tool
OTHER FEATURES: Interfacing

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, measuring, inferring.
SCIENCE CONCEPTS INVOLVED: Quantification, cause-effect, change, interaction, model, validation.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information, resource/reference information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide teachers and students with a new laboratory tool that displays temperature in real time on the computer. To provide teachers and students with a flexible computer program that facilitates maximum use in the laboratory. To provide teachers and students with an

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
				●	Feedback is effectively employed.
				●	Learner controls rate and sequence.
●					Instruction integrates with prior learning.
●					Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend use of this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

introduction to the wide use of computers in science instruction.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need prior experience with the process of measuring temperatures in a laboratory setting and tabulating the results.

CONTENT AND STRUCTURE: This program uses a pair of temperature-sensitive probes (supplied) connected to the Apple through the game paddle port. After calibrating the probes, students can use one or both to record temperatures in a number of suggested experiments. The data are logged directly into the computer and appear on the screen as graphs of temperature against times. Some of the applications are: measuring temperature inside a solar collector, measuring temperature inside an insulated container for ice cubes, and plotting temperature changes in cooling liquids. The temperatures of two different materials can be plotted and compared. This program offers a basic laboratory utilty to introduce students to the use of a computer as a laboratory instrument.

POTENTIAL USES: This package could interface with lab work both in a science setting and in a classroom unit on weather, energy, or solar heating. The program could be used to measure temperature of different liquids, how quickly liquids change temperature in different environments, or to measure the temperature of a classroom at different levels.

ESTIMATED STUDENT TIME REQUIRED: The time required to go through the program is dependent on the sophistication of the measurement being taken, how often, etc. The temperature probes should be calibrated prior to the student activities.

MAJOR STRENGTHS: Reviewers liked the manner in which the program illustrated temperature curves. The ability to save a graph for display later, as well as the wide variety of applications were also noted as a plus to the program.

MAJOR WEAKNESSES: Reviewers felt some of the display screens could be polished — less text and better spacing is needed. The complex procedure for saving and displaying of a graph was cumbersome. This might have been better accomplished from within the program. Documentation for saving and displaying graphs should be much more detailed.

OTHER COMMENTS: The program made excellent use of the computer in a variety of lab activities. The package could be very useful with simple temperature measurements in elementary and more complex experiments at upper levels. The temperature probes must be calibrated for each computer they are used with.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

The Factory

VERSION: Atari

PRODUCER: Sunburst Communications, Inc.
39 Washington Avenue,
Suite RMS
Pleasantville, NY 10570

EVALUATION COMPLETED: July 1984 by the staff and constituents of the Department of Defense Dependents Schools (DoDDS), Washington, D.C. and Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $55.00

ABILITY LEVEL: Grades 4 through 12
SUBJECT: Science, mathematics
TOPIC: Problem Solving
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 16K Atari 400, 600XL. 800, 800XL, 1200XL, 1400XL, 1450XL, color monitor or TV with adapter and single disk drive. Also available for: Apple II, II+, IIe, Commodore 64, TRS 80 Color or Color 2, 64K IBM PC, and 128K IBM PCjr.

REQUIRED SOFTWARE: Atari BASIC, DOS 3.2
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Problem solving, simulation
OTHER FEATURES:
SCIENCE PROCESSES INVOLVED: Decision making, observation, inferring, interpreting data, predicting, controlling variables.
SCIENCE PROCESSES INVOLVED: Interaction, model, replication, system, cause-effect, change, cycle.

DOCUMENTATION AVAILABLE: In program — program operating instructions. In supplementary — suggested grade/ability level(s), instructional objectives, prerequisite skills, program operating instructions, teacher's information, student worksheets, preliminary and follow-up activities.

INSTRUCTIONAL OBJECTIVES: To increase visual discrimination, spatial perception, and logic skills; to gain experience in understanding the importance of sequence and order.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This program gives the students the opportunity to develop problem solving abilities through three levels of challenging simulated production line activities. The first part, TEST A MACHINE, allows a student to try each of three machines to see the effect each has on a raw material. The second part, BUILD A FACTORY, allows the student to put up to eight machines together in sequence which will affect the raw material. In the third part, MAKE A PRODUCT, students are shown a product made by several machines and asked to reconstruct the sequence of events to produce the product.

POTENTIAL USES: The program may be used for independent work, small group discussions or as a large group activity dealing with problem solving. It would be useful in teaching students spacial relationships and the concept of cause and effect.

ESTIMATED STUDENT TIME REQUIRED: 30 minutes to one hour for mastery.

MAJOR STRENGTHS: This package does a good job of teaching sequencing and 3-Dimensional visual perception in a problem solving environment. It is very general in its approach, which makes it applicable to a variety of curriculum units. The technical quality of the program is good.

MAJOR WEAKNESSES: The fine detail in graphics can lead to confusion. The raw material does not look square if it is turned 45 degrees and it is sometimes hard to see the difference between the square holes and the round holes. Since this discrimination is critical to the solution, an expanded display area might help.

OTHER COMMENTS: The program requires imagination and keen visual perception.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

The Food Processor

VERSION: Apple

PRODUCER: ESHA Research
606 Juntura Way SE
Salem, OR 97302
503/585-6242

EVALUATION COMPLETED: November 1984 by the staff and constituents of the Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $120.00

ABILITY LEVEL: Grades 8 through post-secondary
SUBJECT: Science
TOPIC: Nutrition, Health
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II series, 48K
REQUIRED SOFTWARE: Applesoft & DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Laboratory tool, inventory
OTHER FEATURES: Reporting function

SCIENCE PROCESSES INVOLVED: Classifying, organizing information, interpreting data
SCIENCE CONCEPTS INVOLVED: Quantification, cause-effect
DOCUMENTATION AVAILABLE: In Program — program operating instructions, student's instructions. In Supplementary Material — sample program output, program operating instructions, resource/reference information, student worksheets.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide nutritional information on the food eaten by an individual. To analyze the nutritional needs of the individual (personal Recommended Dietary Allowances).

INSTRUCTIONAL PREREQUISITES: (INFERRED) Knowledge of basic terminology used in nutrition.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
●					Content has educational value.
				●	Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
				●	Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
				●	Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators viewed the cost of the package as being reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: 5 (High) to 1 (Low)
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: The package contains 2 double-sided disks, a back-up set, and an 100 page manual. The program centers on a data base containing nutrient information on 1500 foods. The data base supports the following features: 1. Computes RDA profiles personalized for age, sex, weight, height, and activity level; and you can save them for re-use. 2. Nutrient calculations: calculates ONE or ALL of the 26 nutrients in daily food intakes, menus, recipes, etc., and you can see them on the screen; print them out; and save for re-use. 3. Daily food intakes can be averaged for an unlimited number of days, and compared to the RDA profile for that individual. The percentage above or below the recommended amounts are clear and easy to read and interpret. 4. Recipes and menus can be adjusted for number of servings. 5. New foods, recipes, menus and daily intakes can be added to the system. 6. Trial menus can be analyzed and quickly adjusted to the student's needs. 7. Easy Entry: you can enter foods by common measure or weight...the system converts it for you.

POTENTIAL USES: This package could be used in large group demonstrations or by individuals to analyze diets, comparing fast foods, cafeteria food and home cooking. It would be useful for a reference/resource available to coaches, health teachers, biology teachers, and school nurses. Students should use the forms provided to organize their data prior to using the program on the computer to minimize data entry time.

ESTIMATED STUDENT TIME REQUIRED: If the daily food intake worksheet is filled out in advance, a student can determine a personalized RDA and get a nutrition analysis of the food he/she ate in 15-30 minutes.

MAJOR STRENGTHS: This is a very versatile program. Individual food items, single meals, or a whole day's meals can be analyzed, giving 26 nutrients consumed. The program is well-written and carefully explained; it is designed for the novice computer user.

MAJOR WEAKNESSES: In a classroom setting (Jr.-high level) a teacher would need to prepare for and structure the use of this program. It is very comprehensive and might be overwhelming without sufficient adult direction.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

The Heart Simulator

VERSION: Apple

PRODUCER: Focus Media, Inc.
839 Stewart Avenue
Garden City, NY 11530

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $49.00

ABILITY LEVEL: Grades 6 through 12.
SUBJECT: Life Science, Biology, Health
TOPIC: Heart
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and color monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction.
INSTRUCTIONAL TECHNIQUES: Drill & practice, simulation, game.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information, inferring, observing, formulating, models.
SCIENCE CONCEPTS INVOLVED: Model, system, organism, change.

DOCUMENTATION AVAILABLE: In program — student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, student's worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To enhance understanding of the structure of the mammalian heart, to demonstrate the functional coordination of heart chambers, to demonstrate heart-lung coordination, to depict oxygenated and deoxygenated blood flow accurately, to test knowledge of the structure of the mammalian heart, and to offer practice in timing the heart rate.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need some prior exposure to the heart and its functions.

CONTENT AND STRUCTURE: This package consists of one diskette, Lesson Planner with documentation, and one back-up diskette. The HEART SIMULATOR uses high-resolution color gaphics and animation to depict blood flowing through the heart as it beats. The program includes a timing exercise for the heart, an actual representation of blood flowing through the heart, a simulation of heart to lung blood flow (with the blood changing color as it flows), as well as an interactive program in which students are asked to identify the parts of the heart.

These programs are designed so the teacher can use it to demonstrate with a computer as an integral part of your lessons. Only one classroom computer is necessary when using this software package, although students using these programs as part of an individual study project may easily do so without teacher intervention.

In addition to a First Time User's Guide and a step-by-step explanation of program sequence in the Teacher's Lesson Planner, there are many useful suggestions regarding possible units or topics related to the package.

POTENTIAL USES: This package could be used effectively by the classroom teacher as a part of the lesson, as a demonstration tool, and/or as part of laboratory exercises. Also, the routines for defining the parts of the heart would serve well for remedial individualized student work.

ESTIMATED STUDENT TIME REQUIRED: 2-4 class periods.

MAJOR STRENGTHS: The documentation is very comprehensive and effective. The color graphics showing the flow of blood through the heart and lungs is extremely useful. Being able to stop the flow enables the instructor to explain parts, flow, etc. in much more detail to the entire group. It also allows the user to single step the heart beat. The large displays make the program very useable for a demonstration.

MAJOR WEAKNESSES: It would be more effective to have section six, "Parts of the Heart Defined", before section four, "Identifying Parts of the Heart". The mode that shows the flow of blood in the heart and lungs is difficult to see and does not show the branching out and the coming back together of the blood flow.

OTHER COMMENTS: You need a color monitor for the program to be effective!

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

The Incredible Laboratory

VERSION: Atari

PRODUCER: Sunburst Communications
39 Washington Avenue,
Suite RMS
Pleasantville, NY 10570

EVALUATION COMPLETED: June 1984 by staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $55.00

ABILITY LEVEL: Grades 4 through post-secondary.
SUBJECT: Science
TOPIC: Process
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Atari 800 or 800XL, single disk drive and monitor. Also available on the Apple II and Commodore 64.
REQUIRED SOFTWARE: Atari Basic
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Game, problem solving.

SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method. Inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Quanitification, cause-effect, interaction, change, model, significance, validation.

DOCUMENTATION AVAILABLE: In program — student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, prerequisite skills/activities, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To help students to use trial and error and other strategies as tools in problem solving. To enable students to practice note taking by making organized lists of information.

INSTRUCTIONAL PREREQUISITES: (STATED) The user's manual contains six lesson plans containing teacher notes and worksheet materials for classroom use. These lessons are in a sequential order and the prerequisite for one

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
				●	Content is accurate.
				●	Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
●					Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 5.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

lesson is the preceding lesson. The first lesson has no prerequisites stated other than a fourth grade reading level.

CONTENT AND STRUCTURE: The package contains one program disk, a backup disk and a user's manual.

Students playing THE INCREDIBLE LABORATORY use trial and error to discover how various chemicals combine to create colorful and unusual monsters. Each chemical determines a variation of one of the monster's body parts — the head, eyes, arms, body, legs or feet. In the higher skill levels, chemicals have changing properties and may be combined to create entirely new variations.

The INCREDIBLE LABORATORY has three main sections: Novice, Apprentice, and Scientist. The Apprentice and Scientist sections are divided further into two sub-levels each.

All three sections and their sub-levels contain both a Play and a Challenge mode. In the Play mode, students try to determine the effects of the chemicals: they form and test hypotheses by creating monsters with different chemical compositions. In the Challenge mode, they use their conclusions to competitively build and recognize monsters.

POTENTIAL USES: As an exercise in observation, deduction and thinking, this program would be best used with individuals to learn how to use the program then with pairs to work on the challenge. It is also effective as a single focus large group activity. It would be useful in presenting students with an opportunity to make organized lists and practice information gathering - skills needed in scientific work.

ESTIMATED STUDENT TIME REQUIRED: Allow from 30-40 minutes per session for up to five consecutive days.

MAJOR STRENGTHS: The program has very good documentation with some worthwhile class activities that complement and smoothly lead into the use of the software. The lesson plans for using the software are also outstanding. While interest of middle school students was high for a short time, they quickly were frustrated and interest dropped sharply after about 15 minutes of student-directed interaction with the program. Classroom lessons were then introduced and worked through. After three days, students were again involved with the program at a very high enthusiasm level that lasted 40 minutes. When class ended, about half the class stayed to continue with the program. The graphics are very good and interesting - as well as the feedback on predictions.

The program allows students to use combinations of choices to achieve different results. Students discover how each variable affects the final results. The various levels and play/challenge option give the program versatility in use for a number of grade and ability levels.

MAJOR WEAKNESSES: After data is keyed, the time it takes for the flask to boil off and the monster to form seems to be longer than necessary. The students become very impatient with the process. It might be nice to add a technique such as "speed-up" key to shorten the time needed to produce a monster.

Students could get carried away with "creating" various types of monsters on strictly trial and error basis if there is not strict teacher control on computer time and lesson objectives.

Eleventh grade students and above may not find the exercise as interesting as younger students.

OTHER COMMENTS: The objectives could be better reached if the program is not used as a "game".

While the science content of this program is fiction, the problem solving content is accurate and current.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

The King's Rule

VERSION: Apple

PRODUCER: Sunburst Communications
39 Washington Avenue,
Suite RMS
Pleasantville, N.Y. 10570

EVALUATION COMPLETED: June 1984 by the staff and constituents of TIES, Roseville, Minnesota.

COST: $55.00

ABILITY LEVEL: Grades 6 through postsecondary
SUBJECT: Sciences, Mathematics
TOPIC: Process, Problem solvig
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 48K Apple, single disk drive, monitor. Also available on Commodore 64 and TRS-80 in the Fall of 1984.
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Game, problem solving

SCIENCE PROCESSES INVOLVED: Using the scientific method, forming and testing hypotheses
SCIENCE CONCEPTS INVOLVED: Quantification, validation.

DOCUMENTATION AVAILABLE: In program -- program operating instructions, student's instructions. In supplementary materials -- suggested grade/ability level, instructional objectives, prerequisite skills/abilities, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To train students to form and test hypotheses. To build skills in recognizing numerical patterns and relationships. To develop problem solving skills.

INSTRUCTIONAL PREREQUISITES: (STATED) The students must be at fourth grade reading level (Fry) and have a good grasp of the four basic mathematics operations.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
	●				Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
●					Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
●					Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
●					Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged the cost of this package to be reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package included one diskette, backup, and a teacher's guide. It is a game that requires students to generate and test hypotheses. Players try to discover numerical rules that allow them to work their way through a king's castle. Each rule fits a set of three numbers presented by the program — for example, 2-4-6. In this instance, students may come up with the rule: It appears to be "counting by 2". However, the real rule may be hidden. In this case it may be "even numbers." Students generate and test a working hypothesis by asking questions, trying out new number combinations and requesting recaps of data. Six levels of play give students practice in forming and testing increasingly subtle hypotheses. A special option allows teachers to require students to start at certain levels.

POTENTIAL USES: This package presents an excellent method for students to understand hypotheses and the testing of those hypotheses to discover rules. This would be great for teaching higher level problem solving strategies and pattern testing. It could be useful in an individual or small group setting.

ESTIMATED STUDENT TIME REQUIRED: It will take approximately 20-30 minutes per level. There is a total of 6 levels with the sixth level taking the longest.

MAJOR STRENGTHS: Reviewers liked having numerous rules and patterns. The program did not seem to get repetitious if done over many times. It makes good use of the computer capabilities.

MAJOR WEAKNESSES: Level 1 through 3 must have 3 riddles answered in a row to go on to next level. Once a reward (key, shield or whatever) is obtained it should not be lost because you get the next riddle wrong. The program should be consistent. In levels 4 through 6, rewards are kept until you get 3 total and are allowed to go on. The program would be better with a student management section included.

OTHER COMMENTS: Besides the weakness noted above, it is a very good program with nice documentation.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

The Micro Gardener

VERSION: Apple

PRODUCER: Educational Activities, Inc.
P.O. Box 392
Freeport, NY 11520

EVALUATION COMPLETED: July 1984 by the staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $59.00

ABILITY LEVEL: Grades 4 through post-secondary
SUBJECT: Science
TOPIC: Plants
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Simulation, problem solving.
SCIENCE PROCESSES INVOLVED: Acquiring information, using the Scientific Method, decision making, observing, controlling variables, interpreting, data, predicting.
SCIENCE CONCEPTS INVOLVED: Cause-effect, change, cycle, interactions, organism.

DOCUMENTATION AVAILABLE: In program — Program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, sample program output, program operating instructions, teacher's information, resource/reference information, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: To study the area of growth requirements of green plants.

INSTRUCTIONAL PREREQUISITES: To be able to read at a fourth grade level or above.

CONTENT AND STRUCTURE: There are three levels of difficulty in this simulation program. Beginners are given guidance and immediate feedback as they make decisions

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

about planting a seed and the amount of light, water, and fertilizer, etc. a growing house plant requires. The intermediate level requires the user to mix potting soil and to make decisions with less assistance as he or she works to GROW A HOUSEPLANT.

The advanced level, GROW A POTTED PEPPER presents a plant with different requirements than the more tolerant houseplant.

In addition to the variety of requirements for plant growth, students learn the difference between Celsius and Fahrenheit temperature, the importance of the path of the sun and the amount of light available in different exposures, and the part chance plays in growing plants. Alas, even if no errors are made in watering, feeding, temperature, and exposure, an insidious plant disease lurks in the air and attacks without warning.

These programs are learn-by-doing simulations. They have the flavor of a game, aided by high resolution graphics of the growing plants. Users who succeed in growing the houseplants to maturity are rewarded with a first place ribbon; the pepper plant yields two juicy red peppers to successful horticulturalists!

This package consists of one diskette, one backup diskette and a documentation manual.

POTENTIAL USES: This package could be used as a part of a unit on plant growth. Students need an introduction to plant growth and the in depth processes involved before using this program. The program could be used as a learning station with individuals or small groups. It could also be used as a large group activity or as a class presentation. It would be a useful program in areas where the growing season is short or as a preparation to growing your own.

ESTIMATED STUDENT TIME REQUIRED: Each of the three levels of difficulty will require approximately 20-45 minutes. To be effective the program should be run several times.

MAJOR STRENGTHS: The program does a good job involving the student. The students time is well used because the student is constantly interacting with the computer with little or no dead time. It is motivating because it offers a challenge, allows student control, and is done in an interesting format. The program provides a fun way to reinforce the growth needs of plants. Information is displayed graphically in a direct, meaningful manner. The use of graphics and sound enchance the package. Trial and error plant cure is a reality in life.

MAJOR WEAKNESSES: If the microgardner accidentally chooses a correct procedure, the program makes little or no comment as to why it was correct. More complete responses would enhance the program. A student record sheet or graph to record the results would promote the learning process.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

The Scientific Method

VERSION: Apple 1983

PRODUCER: Cygnus Software
8002 E. Culver
Mesa, AZ 85207

EVALUATION COMPLETED: June 1984 by the staff and constituents of Jefferson County Public Schools, Denver, Colorado.

COST: $39.00

ABILITY LEVEL: Grades 7 through 12
SUBJECT: Sciences
TOPIC: Process
MEDIUM OF TRANSFER: 5-1/4" flexible disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: DOS 3.3 and Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Tutorial, problem solving.
SCIENCE PROCESSES INVOLVED: Using the Scientific Method, inferring, hypothesizing, interpreting data, observing, cause-effect, validation, perception, theory.

DOCUMENTATION AVAILABLE: In program — Program operating instructions, student's instructions. In supplementary materials — Suggested grade/ability level, instructional objectives, program operating instructions, post-test, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (STATED) To introduce the student to the Scientific Method.

CONTENT AND STRUCTURE: This tutorial introduces the student to the scientific method by presenting the following steps: define the problem, collect information, make hypothesis, check hypothesis, and reach conclusion. Finally, the student is given the opportunity to act as a scientist and put all the steps together to solve a problem. Throughout the program the importance of the use of control factors is emphasized. A series of puzzles, mysteries, problems, and questions teach the student to use a logical and common sense approach to solving a problem.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowiedge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
●					Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
		●			Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would highly recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 4, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

POTENTIAL USES: This program could be used with one or two students at a computer as an introduction to lab experiments in any science class, or as an introduction to preparing a science fair project.

ESTIMATED STUDENT TIME REQUIRED: A student would need two class periods to complete the program.

MAJOR STRENGTHS: This program gives excellent examples of skills needed by scientists. It is very easy to use the program. The student presses the space bar to continue and has the option, at several points, to review the previous material. This program carries the student step by step toward better thinking.

MAJOR WEAKNESSES: The packaging of the program is poor. There needs to be a hardback cover with a pocket to store the disk in.

OTHER COMMENTS: The program accesses the disk during operation, thus it cannot be used to boot up several machines at once. Overall the program is EXCELLENT!

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

The Skies Above/The Waters Below

VERSION: Apple

PRODUCER: Aquarius Publishing, Inc.
PO Box 128
Indian Rocks Beach, FL 33535

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Public Schools, Rockville, Maryland.

COST: $115.00

ABILITY LEVEL: Grades 6 through 10
SUBJECT: Science
TOPIC: Earth Science
MEDIUM OF TRANSFER: 5 1/4 in. disk
REQUIRED HARDWARE: Apple II Family, one disk drive, monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice and tutorial
OTHER FEATURES: Reporting function

SCIENCE PROCESSES INVOLVED: None
SCIENCE CONCEPTS INVOLVED: Cycle, fundamental entities
DOCUMENTATION AVAILABLE: In Program — post-test, student's instructions. In Supplementary Material — program operating instructions, teacher's information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide instruction and practice on the topics of planets, stars, streams, rivers, and oceans.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction on the topics listed above.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●	●			Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
			●		Student creativity is effectively stimulated.
			●		Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
		●			Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
●					Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is not reasonable compared to its instructional value.

Evaluators indicated that they would not use or recommend this package. (Note reasons under weaknesses.)

Summary: Scale 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package contains four disks and a 3 page Users Guide. The four disks contain the program "The Planets", "The Stars", "Streams and Rivers", and "The Oceans". Each program includes a management system able to store records for up to 60 students. The programs provide instruction and practice on basic facts and vocabulary for the respective topic.

POTENTIAL USES: The four programs could be used for introduction, review, and remediation in Earth Science, Grades 7-9.

ESTIMATED STUDENT TIME REQUIRED: One class period per disk.

MAJOR STRENGTHS: Certain graphics sequences illustrate the subject clearly. The Teacher Management Program, a useful record-keeping function, is capable of handling 60 records. It reports the percentage correct for each student user and is accessed by a special code. The four disk program is nicely packaged in a sturdy binder.

MAJOR WEAKNESSES: The user's attention is not effectively engaged during the initial presentation of information. The programs begin with information that the student will later be quizzed on. This is usually 2-5 screens of text. The program lacks features that encourage the student to remember the information. The user is tested on the information in the same order that it was presented. This promotes guessing and removes any challenge to remember the facts. The program does not accept close approximations of the correct answer. User control is lacking. There is no way to leave the program or alter the pacing of the presentation.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Voyage of the Mimi: Maps and Navigation

VERSION: Apple

PRODUCER: Holt, Rinehart & Winston
Order Fulfillment Dept.
383 Madison Avenue
New York, NY 10017

EVALUATION COMPLETED: November 1984 by the staff and constituents of the Northwest Regional Laboratory in Portland, Oregon.

COST: $122.25 per unit

ABILITY LEVEL: Grades 4 through 8
SUBJECT: Sciences, Earth Science
TOPIC: Navigation and Map reading
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: 64K Apple II+, IIe, or IIc, one disk drive, monitor (color recommended).
REQUIRED SOFTWARE: Dos 3.3
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment
INSTRUCTIONAL TECHNIQUES: Tutorial, simulation, game, problem solving.

SCIENCE PROCESSES INVOLVED: Communicating, interpreting data, measuring, observing, using numbers, and relating time and space.

SCIENCE CONCEPTS INVOLVED: Order, population, quantification, time-space, and model.

DOCUMENTATION AVAILABLE: In program — Program operating instructions, and student's instructions. In supplementary materials — Suggested grade/ability level, sample program output, program operating instructions, teacher's information, student's instructions, student worksheets, and follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To develop skills in map reading. To be able to use longitude and latitude to determine position. To understand basic concepts of navigation. To understand the relationship between distance, speed, time, and heading.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
				●	Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
●					Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
●					Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
●					Learner controls rate and sequence.
●					Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
	●				Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators indicated that they would highly recommend this package.

Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 5, Technical Characteristics - 5.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL PREREQUISITES: (INFERRED) None stated.

CONTENT AND STRUCTURE: This package contains two circulation disks, two back-up disks, 25 Student Guides, and an Overview Teacher's Guide to the Series. Maps and Navigation is one of a four package series designed by The Bank Street College Project in Science and Mathematics. The software is intended to be used in conjunction with the TV/video cassette series and book entitled 'Voyage of the Mimi'.

Other titles in the series are; Introduction to Computing, Whales and Their Environment, and Ecosystems.

Maps and Navigation includes four programs; Pirates Gold, Lost at Sea, Hurricane, and Rescue Mission. In Pirates Gold the user is the captain of a ship searching for sunken treasure. The user must guide the ship to the given latitude and longitude using navigation charts, and retrieve the treasure from the sunken pirate ship.

In Hurricane the user is again the captain of the ship. The object is to avoid the oncoming hurricane by navigating the ship to an island of safety.

In Lost at Sea the user finds that their ship has been damaged and slowly sinking. While trying to fix the problem they have drifted and are now lost. The user must determine their position using the radio directin finder and the navigation charts, and then radio for help.

In Rescue Mission the user must locate the position of another ship which needs help freeing a humpback whale that was caught by mistake. He/she must first locate the ship, plot the appropriate course and navigate the ship to the distressed whale.

POTENTIAL USES: Pirate's Gold, Hurricane, and Lost at Sea are most appropriate for use with individuals or small groups. The Rescue Mission game could be used with as many as four teams of 2 or 3 students. The package could be used in an earth science class in a unit on navigation or in conjunction with a unit in geography.

ESTIMATED STUDENT TIME REQUIRED: 30 minutes a day for 3 to 5 days.

MAJOR STRENGTHS: This package is very informative, educationally fun, and extremely motivating. The directions are very clear. The support materials are very effective.

MAJOR WEAKNESSES: The clear disk covers are easily lost.

OTHER COMMENTS: The users need to have the navigational charts from the Users Guide in front of them at all times while using Rescue Mission.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

The Worm

VERSION: Apple

PRODUCER: Ventura Educational Systems
3440 Brokenhill Street
Newbury Park, CA 91320

EVALUATION COMPLETED: October 1984 by the staff and constituents of the Northwest Regional Educational Laboratory.

COST: $39.95

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Sciences
TOPIC: Biology, Life Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II Family, single disk drive, color monitor
REQUIRED SOFTWARE: DOS 3.3, Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, game, and information retrieval.
SCIENCE PROCESSES INVOLVED: Interpreting data

SCIENCE CONCEPTS INVOLVED: Organism, model, and order.
DOCUMENTATION AVAILABLE: In Program – Student's instructions, teacher's information, and post-test. In Supplementary Material — Suggested grade/ability level, program operating instructions, student's instructions, student worksheets, and follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide drill and practice on the digestive, nervous, circulatory, reproductive, and locomotive systems of the common earthworm.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The user must be familiar with the terminology associated with the anatomy of the worm.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is not reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made. (Note changes under weaknesses or other comments.)

Summary: Scale 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: This package contains one disk and a Users Guide. The worm deals in detail with the digestive, nervous, circulatory, reproductive and locomotive systems of the common earthworm. Students learn the basic structures which are common to many members of the Phylum Annelida. The learning system includes an Identification Game which provides practice in identifying and spelling anatomical structures, a Data Retrieval Utility which allows students to access detailed information, and a Quiz Machine to help students practice matching structures and functions. A Teacher's Guide section includes lesson plans, a lab guide, and student worksheets.

POTENTIAL USES: This package could be used with individual students in a high school biology or life science class to review the structure of the worm, or to prepare for a dissection.

ESTIMATED STUDENT TIME REQUIRED: 15 to 20 minutes for 2 to 3 days.

MAJOR STRENGTHS: The quiz part of this program is well done. If the user misses a question the correct answer is given along with a good explanation. The program reviews the terms missed in the quiz section.

MAJOR WEAKNESSES: The target audience of seventh grade is too young. The package is more appropriate for grades nine and above. The support materials do not include a compilation of the materials covered in the program. The programs do not prompt the user. The user must be very familiar with the operating instructions that are in the users guide in order to operate the system effectively. The error trapping within the program is not very effective. The only penalty for wild guessing is the loss of a point.

OTHER COMMENTS: The reviewers questioned the use of the computer for this type of an activity. Another medium may be more suited.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Think Like a Scientist

VERSION: Apple

PRODUCER: Micro Learn, A Division of
MicroLab
2699 Skokie Valley Road
Highland Park, IL 60038

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Public Schools, Rockville, Maryland.

COST: $35.00

ABILITY LEVEL: Grades 7 through 10
SUBJECT: Sciences
TOPIC: Science Process, Physics, Physical Science
MEDIUM OF TRANSFER: 5 1/4 in. disk
REQUIRED HARDWARE: 48K Apple II, IIe or IIc, Single disk drive, monitor. Also available for Commodore 64 and IBM PCjr.
REQUIRED SOFTWARE: DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction
INSTRUCTIONAL TECHNIQUES: Drill and practice, and tutorial

OTHER FEATURES: Assessment
SCIENCE PROCESSES INVOLVED: Classifying, hypothesizing, inferring, interpreting data, observing.
SCIENCE CONCEPTS INVOLVED: Cause-effect, energy-matter, field, force and fundamental entities.

DOCUMENTATION AVAILABLE: In Program — program operating instructions, post-test, student's instructions. In Supplementary Material — suggested grade/ability level, instructional objectives, pre-test, post-test, teacher's information, student worksheets, follow-up activities and glossary.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
				●	Content is free of stereotypes.
●					Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
				●	Package components are durable.
●					Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
●					Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is reasonable compared to its instructional value.

Evaluators would use or recommend use of this package only if certain changes were made. (Note change under weaknesses or other comments.)

Summary: Scale 5 (High) to 1 (Low).
Content - 4, Instructional Characterisitcs - 4, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-680

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

INSTRUCTIONAL OBJECTIVES: (STATED) To develop proficiency in the application of skills used in the study of physical science so that students will approach the content in a logical and systematic manner. To reinforce concepts of electricity, light, force, energy, and the nature of matter. To provide practice taking multiple choice tests. To improve thinking skills by introducing science processes.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Prior instruction on the topics listed in objective two above.

CONTENT AND STRUCTURE: Users practice thinking like a scientist as they review major concepts in electricity, light, force, work and energy, and the nature of matter. The package includes a tutorial mode that gives explanations for every answer choice, correct and incorrect, help screens, and practice on important concepts. Test mode operates like the tutorial but without helps.

POTENTIAL USES: This package could be used with small or large groups of students to introduce the scientific method. The topics covered make it appropriate for use during an elementary mechanics unit.

ESTIMATED STUDENT TIME REQUIRED: Approximately two class periods for each section, one at the beginning of the unit and one at the end of the unit. This could be as much as from 10 to 15 class periods total.

MAJOR STRENGTHS: The package provides a good introduction to the scientific method. It provides a good coverage of the topics. The package is user friendly and it is easy to move from one portion of the package to another.

MAJOR WEAKNESSES: The tutorials contain too much reading. More graphics could be added to enhance the explanations. The package is a poor use of computer time. All of the materials covered in this package are available through other less expensive media.

OTHER COMMENTS: It is very important that the student have a good background in the various topics covered. The package requires the student to draw inferences that would be very difficult otherwise.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Time & Seasons

VERSION: Apple, 1983

PRODUCER: Rand McNally and Company
Educational Publishing
Division
8255 N Central Park Avenue
Skokie, IL 60076

EVALUATION COMPLETED: July 1984 by the staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $111.00

ABILITY LEVEL: Grades 7 through 9
SUBJECT: Geography, Earth Science
TOPIC: Seasons
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+ or IIe, single disk drive, and monitor (color preferred). Also available for Atari 800.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Remedial, standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, simulation, probelm solving.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Time-space, quanitifcation, order, cycle.

DOCUMENTATION AVAILABLE: In program — program operating instructions, pre-test, post-test, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, program operating instructions, pre-test, post-test, student's instructions, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To develop an understanding of how time is measured and regulated on earth. To develop an understanding of how units of time on earth are related to the earth's rotation and revolution. To develop an understanding of the relationship between the earth's inclination to its orbital plane and its orbit around the sun as

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
	●				Content represents current knowledge of subject.
●					Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
				●	Content is free of stereotypes.
●					Purpose of package is well defined.
●					Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
				●	Student creativity is effectively stimulated.
●					Feedback is effectively employed.
●					Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Package components are durable.
	●				Information displays are effective.
●					Users can operate easily and independently.
●					Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
●					Program is reliable in normal use.

SA - Strongly Agree   A - Agree   D - Disagree   SD - Strongly Disagree   NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 4, Technical Characteristics - 4.

Northwest Regional Educational Laboratory
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(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

determiners for seasons and climate on earth. To develop an understanding of the relationships of seasons and climate between the Northern and Southern Hemispheres.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The student needs prior knowledge of the general concepts of time and climate covered in the program.

CONTENT AND STRUCTURE: The package consists of two diskettes, a teacher's guide and a students log book.

The courseware user is expected to interpret color, lines, and scale; determine distance, direction, and time on earth; locate and identify earth's position related to its rotation and revolution around the sun; and use knowledge about time and seasons to solve problems. The content is organized in a series of activities which can be accessed from the contents as follows: Pre-test, Meridians/Longitude Lines/Time Lines, Celestial Meridians Define Time Zones, Rotation, Time Quirks, Seasons, Length of Day, Years, Post-Test (accessible by special coding only), Simulation: The World Farmer, Simulation: The International Phone Call, and Dictionary.

The Guide provides you with computer tips, a scope and sequence of content objectives, a description of the computer activities, and suggestions for integrating the disk in your program.

POTENTIAL USES: This package could be used instead of a workbook to enforce, review, or introduce the concepts of time and seasons. Students should have an introduction to the various aspects of the topic prior to using the software. The program would best serve a single student or small group.

ESTIMATED STUDENT TIME REQUIRED: Each of the 7 units would best be done as single sessions of 20 to 50 minutes. The pre- and post-tests are worthwhile and could be coupled to the 1st and 7th unit.

MAJOR STRENGTHS: The numerous concepts and content of the program are accurate. The graphics enhance the program. The Pre and Post is a clever test with a special code (for teachers) to get a valid user's score. Provision of these tests make the measurement of the objectives much easier. The log book had questions on some activities that allow a better understanding of the student's comprehension.

The ability to exit the program at any point is appreciated during a lengthy tutorial. Also, the ability to back up for reviews is excellent.

MAJOR WEAKNESSES: Teacher and students must do a great deal of reading to use the program. Some of the graphics are not clear, i.e. turning the Earth from equatorial to the polar view. Some directions are incomplete (especially on how and when to move the cursor in the unit on meridians). There is also a direction problem with the moving of Parallels and Meridans.

A correct response is required for progress. The user can answer incorrectly indefinitely which is very frustrating.

OTHER COMMENTS: This is a very thorough package. It requires a purchase of classroom copies of the program, since the disk is continually accessed.

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Visible Solar System

VERSION: Commodore 64

PRODUCER: Commodore Business Machines, Inc.
1200 Wilson Drive
Westchester, PA 19380

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $29.95

ABILITY LEVEL: Grades 4 through 8
SUBJECT: Sciences
TOPIC: Astronomy
MEDIUM OF TRANSFER: ROM cartridge
REQUIRED HARDWARE: Commodore 64, and monitor
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Game, simulation.
SCIENCE PROCESSES INVOLVED: Acquiring information, inferring.

SCIENCE CONCEPTS INVOLVED: Force, invariance, quantification, resonance, time-space.

DOCUMENTATION AVAILABLE: In supplementary materials — sample program output, program operating instructions, resource/reference information, student's instructions.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide information on the planets of the solar system.

CONTENT AND STRUCTURE: This package consists of one ROM cartridge and a user's guide. The student plays the role of a space ship commander who may travel about our solar system exploring the planets. They learn key statistics about each planet and compare the planetary statistics using a feature in the program called "Astro Calc".

POTENTIAL USES: This program could be used as a teacher directed demonstration to introduce the first six planets of the solar system. It could also be used by individual students for review.

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EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
				●	Content is free of stereotypes.
		●			Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
●					Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
			●		Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
	●				User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
	●				Users can operate easily and independently.
		●			Teachers can employ package easily.
●					Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 3.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

ESTIMATED STUDENT TIME REQUIRED: 1 to 1 1/2 hours.

MAJOR STRENGTHS: The graphics of the planets are well done. The program enables the student to compare the planetary statistics of any two of the six planets. The data is given as a ratio.

MAJOR WEAKNESSES: The package does not provide information for planets beyond Saturn. There are no built-in help features or prompting, so the user must refer to the manual in order to operate the program. The program gives a persons weight on each planet assuming they weigh 160 pounds on earth. The package would be more motivational if the student could enter their own weight.

OTHER COMMENTS: This program is basically a slide show with some animation. The program may be considered more of a game than a learning activity, however, it does have potential. It would need to have a workbook or handout to make the package more useful in the classroom setting.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Visifrog

VERSION: Apple

PRODUCER: Ventura Educational System
3440 Brokenhill Street
Newbury Park, CA 91320

EVALUATION COMPLETED: October 1984 by the staff and constituents of Montgomery County Schools, Rockville, Maryland.

COST: $39.95

ABILITY LEVEL: Grades 7 through post-secondary
SUBJECT: Sciences
TOPIC: Biology, Life Science
MEDIUM OF TRANSFER: 5-1/4 in. disk
REQUIRED HARDWARE: Apple II Family, one disk drive, color monitor
REQUIRED SOFTWARE: Applesoft, DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction and enrichment
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, game, and information retrieval.
SCIENCE PROCESSES INVOLVED: Acquiring information
SCIENCE CONCEPTS INVOLVED: Organism

DOCUMENTATION AVAILABLE: In Program — instructional objectives, post-test, teacher information, student's instructions. In Supplementary Material — Suggested grade/ability level, instructional objectives, program operating instructions, teacher's information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To provide practice in identifying and spelling the names of the anatomical structures of the frog. To provide information about the function of the anatomical structures of the frog.

INSTRUCTIONAL PREREQUISITES: (INFERRED) The user must be familiar with frog anatomy.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
			●		Science processes well integrated into package.
				●	Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
		●			The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

The cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made. (Note changes under weaknesses or other comments.)

Summary: Scale 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 3.

Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue • Portland, Oregon 97204
(503) 248-6800

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

CONTENT AND STRUCTURE: This package containes one disk and a 30 page users guide. The anatomy of the frog is displayed in computer graphics. The user practices identifying and spelling the names of structures in the musculature, digestive system, cardiovascular system, nervous system and skeleton of the frog. A data base is included describing each structure and its function. The VISIFROG learning system also includes a multiple choice question and answer game which challenges students to match anatomical structures and functions. A teacher's guide section includes 3 lesson plans, a lab guide, and 6 student worksheets.

POTENTIAL USES: This package could be used by individual students or pairs of students, grades 9-12, for review or remediation, or in conjunction with a frog dissection lab. It is difficult to use for classroom demonstration on a large screen monitor. A color monitor is recommend.

ESTIMATED STUDENT TIME REQUIRED: 20 minutes for 2-3 days.

MAJOR STRENGTHS: The data base of frog information is complete and accessible. The feedback is immediate and includes a thorough description of the frog part in question.

MAJOR WEAKNESSES: The cursor indicating the anatomical parts in question is difficult to see. The program does not discourage guessing in the structure identification section. The program lacks sufficient on-screen prompts. The user must have basic operating instructions in memory.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

This report made possible by a grant from SOHIO Corporate Contributions.

micro SIFT COURSEWARE EVALUATION

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Water Pollution

VERSION: Apple, 1982

PRODUCER: Educational Materials and Equipment
P.O. Box 17
Pelham, NY 10803

EVALUATION COMPLETED: June 1984 by staff and constituents of Jefferson County Public Schools, Lakewood, Colorado.

COST: Apple; $29.50,
TRS-80; $36.75

ABILITY LEVEL: Grades 7 through 12
SUBJECT: Science
TOPIC: Environmental Science
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 16K Apple II, II+, IIe, or IIc, single disk drive, and monitor. Also available for TRS-80 Model III and IV.
REQUIRED SOFTWARE: Applesoft and DOS 3.3
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.

INSTRUCTIONAL TECHNIQUES: Tutorial, simulation, laboratory tool.
OTHER FEATURES: Content control.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, using the Scientific Method, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Cause-effect, change, quantification, validation.

DOCUMENTATION AVAILABLE: In program — program operating instructions, post-test, student's instructions. In supplementary materials — instructional objectives, program operating instructions, teacher's information, student's instructions, student worksheets, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (STATED) The WATER POLLUTION prog~~ram will~~ help students to: understand the variables that improve and degrade water quality; determine the impact of water pollution on aquatic populations; predict the effects of manipulating one or more variables;

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
	●				Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
●					Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
●					User support materials are comprehensive.
●					User support materials are effective.
	●				Package components are durable.
●					Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 4, Instructional Characteristics - 3, Technical Characteristics - 4.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

improve data intrepretation, problem-solving skills, and graphing skills; evaluate hypotheses in light of experimental results; and design experiments and plan a research project.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need a general knowledge of the terminology used in discussing water pollution.

CONTENT AND STRUCTURE: This package consists of a circulation disk, a back-up disk, and a Teacher's Guide including some student worksheets. WATER POLLUTION is an interactive computer simulation consisting of two parts. The Introduction reviews the basics of water pollution including physical properties of water, factors affecting dissolved oxygen levels, types of water pollution, fishkills, biochemical oxygen demand, and primary and secondary water treatment. The Experiment Mode sets up and runs water pollution experiments. In the Experiment Mode, students manipulate the variables which influence water quality. Results are displayed in tables and graphs. A student lab booklet provides basic activities to acquaint all students with various aspects of water pollution, as well as advanced activities to challenge brighter students. If possible, run the program in advance to see what your students will encounter. Prior coverage of water pollution topics reviewed in the program's introduction is recommended.

POTENTIAL USES: This package would be most effective in Life Science or Applied Science. It can be used with a class or individually.

ESTIMATED STUDENT TIME REQUIRED: The whole package would take 4 to 5 days to complete. The computer time would require only two of the days.

MAJOR STRENGTHS: In order to complete the worksheets included in this package it is necessary for students to concentrate and perform some higher level thinking. The worksheets also provide suggested starting points. The graphs immediately let the students know the effects when pollution levels, types of waste, etc., are changed. The graphics are well designed and interesting.

MAJOR WEAKNESSES: The program needs to be introduced by the teacher in order for the student to work with it successfully.

OTHER COMMENTS: This package is an off shoot of an unpolished public domain program.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Weather

VERSION: Apple, 1982

PRODUCER: PUBLISHER
Scott-Foresman & Co.
Electronic Publishing Division
1900 East Lake Avenue
Glenview, IL 60025

DEVELOPER
Heinemann Computers in Education Ltd.
22 Bedford Square
London, England WC1B 3HH

EVALUATION COMPLETED: July 1984 by the staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $59.95

ABILITY LEVEL: Grades 7 through post-secondary.
SUBJECT: Earth-Science
TOPIC: Weather
MEDIUM OF TRANSFER: 5-1/4" disk.

REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Standard instruction, enrichment.
INSTRUCTIONAL TECHNIQUES: Simulation, teacher demonstration.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information.
SCIENCE CONCEPTS INVOLVED: Model, quantification, change, interaction.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — prerequisite skills/activities, sample program output, program operating instructions, teacher's information, follow-up activities.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To develop knowledge of standard weather symbols, terminology, standard weather concepts, and the ability to interpret weather charts.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students should have prior instruction in terminology and concepts covered by the program.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
●					Content is accurate.
●					Content represents current knowledge of subject.
●					Science issues presented objectively.
●					Content has educational value.
●					Science processes well integrated into package.
●					Content is free of stereotypes.
●					Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
●					Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
	●				User support materials are effective.
●					Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 5, Instructional Characteristics - 3, Technical Characteristics - 4.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: The package consists of one program diskette, a back-up diskette, and a 27-page manual. The program provides a bank of data in the form of synoptic charts for teaching elementary meterology. The data is available for 32 weather stations on the screen. The user can manipulate weather information (i.e., pressure, temperature, wind, etc.) and view results of changes on weather charts.

POTENTIAL USES: The program could serve as a supplementary activity or "lab" experience when introducing or culminating the concept of weather to students.

ESTIMATED STUDENT TIME REQUIRED: This program would require 1 1/2 to 2 class periods (75 to 90 minutes) for most middle/junior high and high school students. The user must also allow for class preparation and intervention during class use of the program.

MAJOR STRENGTHS: The graphics are good and they allow several variables to be used. The program could not be easily replaced by another media. It makes very good use of the computer's ability to present a series of graphics.

The program teaches the fundamental concepts about basic weather systems. A good sample student data sheet is presented. It is a clever idea to zoom in on sections of the map to highlight parts of station model. The weather symbols used in this program are correct for U.S. students though the program was written in Great Britain.

MAJOR WEAKNESSES: Students must be instructed in the objective of the lesson and told how to operate the variables in the program. The directions are complex and confusing, and would require constant teacher supervision. The instruction manual suggests a worksheet to be used with the computer program and that is essential. Students should have a chart listing all of the valid commands that can be used to manipulate this program.

The program does not give much descriptive information within the program to support the processes involved. It should give definitions of terms with symbols used in the program. It assumes the student knows basic meteorology terms.

OTHER COMMENTS: This is a good program and, with the proper teacher preparation, can become an effective teaching tool.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Weather Command: A Science Game

VERSION: Apple, 1984

PRODUCER: Educational Audio Visual, Inc.
Pleasantville, NY 10570

EVALUATION COMPLETED: July 1984 by the staff and constituents of Oakland ISD, Pontiac, Michigan.

COST: $40.00

ABILITY LEVEL: Grades 6 through 12.
SUBJECT: Earth-Science
TOPIC: Weather
MEDIUM OF TRANSFER: 5-1/4" disk.
REQUIRED HARDWARE: 48K Apple II, II+, IIe or IIc, single disk drive, and monitor.
REQUIRED SOFTWARE: Applesoft and DOS 3.3.
INSTRUCTIONAL PURPOSE: Enrichment.
INSTRUCTIONAL TECHNIQUES: Game.
SCIENCE PROCESSES INVOLVED: Acquiring information, organizing information, interpreting information, inferring, hypothesizing.
SCIENCE CONCEPTS INVOLVED: Cause-effect, change, interaction.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — sample program output, program operating instructions, resource/reference information.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To provide assistance in understanding weather concepts and forcasting.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Student should have prior instruction in basic weather concepts before using the package.

CONTENT AND STRUCTURE: The package consists of one diskette and a 6-page manual. The user is in the position of a weather controller assigned to provide proper weather conditions for the arrival of a visitor from another planet. Various machines, charts and help screens are made available to the user in manipulating the weather. The user controls the time and the answer rate. A score is provided at the end of the game.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
		●			Purpose of package is well defined.
		●			Package achieves defined purpose.
		●			Content presentation is clear and logical.
				●	Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
		●			Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of the package is reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 3, Technical Characteristics - 3.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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The criteria used for this evaluation have been customized to accommodate SCIENCE courseware.

POTENTIAL USES: This program could be used as a final activity of a unit on weather and would be most effective as a reinforcement activity. A teacher presentation on multiple or large screens would be necessary for effective use. Much preparation and teacher-prepared handouts would be necessary for any junior high or middle school use. The program would work well with young gifted students.

ESTIMATED STUDENT TIME REQUIRED: To investigate all of the outcomes of the various weather machines on the weather and to predict the appropriate actions to take for the given situations will require several 30 to 60 minute sessions.

MAJOR STRENGTHS: The content of the package is appropriate and the weather concepts are well covered. The hints and definitions provided are helpful. The user must assimilate all of the information and apply the factors to the situation. The program makes good use of color and graphics.

MAJOR WEAKNESSES: The teacher must complete the simulation prior to presenting it to the students so that they will understand the operations of the variables and how to complete the program successfully. Without better user instructions, students could waste a lot of time at the computer.

It may be difficult for the students to predict the appropriate action without a previous study of the concepts. The documentation gives no information concerning grade level/type of audience, prerequisite skills, or time. Although the maps and other graphic displays supply useful information, they are not always clear. More background information should be supplied so that informed decisions can be made. Too many words are on the initial screen for the student to read and there is no scroll control.
There is no sound after the title introduction! Sound could help the program to be more motivating. The program needs better reinforcement and more hints for the student.

OTHER COMMENTS: This program is really for high school level and above. Eighth grade students could work the program after a few trial and errors.

This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

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This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Weather Factors

VERSION: Commodore 64

PRODUCER: Micro Ed, Inc.
P.O. Box 444005
Eden Prarie, MN. 55344

EVALUATION COMPLETED: July 1984 by staff and constituents of Northwest Regional Educational Laboratory, Portland, Oregon.

COST: $34.95

ABILITY LEVEL: Grades 4 through 9.
SUBJECT: Science
TOPIC: Earth Science
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: Commodore 64, single disk drive, and monitor.
INSTRUCTIONAL PURPOSE: Standard instruction.
INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, problem solving.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information.
SCIENCE CONCEPTS INVOLVED: Cause-effect, interaction, quantification.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — suggested grade/ability level, instructional objectives, program operating instructions, teacher's information.

INSTRUCTIONAL OBJECTIVES: (STATED) To find distances to clouds, to understand how wind speed and cloud height are determined, to use the dew point to find the height of clouds, and to understand why the seasons change.

CONTENT AND STRUCTURE: This package consists of one diskette and a documentation sheet. THUNDERBOLT, WIND CLOUD, DEW DROP, and FOUR SEASONS deal with topics in the area of Earth Science.

continued on back →→

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
	●				Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
		●			Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
	●				The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
	●				Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
	●				Information displays are effective.
		●			Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package only if certain changes were made.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 2.

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In the program THUNDERBOLT, the learner will gain an understanding of the speed of sound by finding the distance to a thundercloud using the difference in time between the flash of a bolt of lightning and the sound of the thunder. Also included in this program, the learner will have to find the time it will take for the cloud to reach them. This brings out an understanding of how speed and distance can be related to time.

The program WIND CLOUD will show how time and distance can be used to find a cloud's height, as well as its speed. The simple use of a rising balloon will show the learner how both of these objectives can be attained.

In the program DEW DROP, the dew point temperature can be used to find the temperature at which dew will form on the grass, and the height of clouds. The learner will see quite quickly how important the dew point temperature, as well as the ground temperature, is when finding not only where but why clouds form.

Finally, in the program FOUR SEASONS, the learner will gain an understanding of why the earth has the four seasons: fall, winter, spring, and summer. Using the earth and sun's relationship, the learner will see graphically how important the earth's tilted axis is. Also, they will see why the seasons are not always the same throughout the world.

This package of four programs is not a series, each program was developed independently.

POTENTIAL USES: This package could be used by individuals as well as small groups, as an enrichment or supplement activity.

ESTIMATED STUDENT TIME REQUIRED: 2-4 class periods.

MAJOR STRENGTHS: The section on "Wind Cloud" provides good practice in division and the skill of substituting information into a given formula and [illegible] solving the problem.

MAJOR WEAKNESSES: The instructions in the program are poorly stated, or almost non-existent. The support materials are brief and inadequate. Some of the math formulas are too difficult, especially in the "Dewpoint" section, for elementary students. The quality of feedback is uneven, in some cases you must continue guessing until you get the right answer and others you are simply told you are wrong. The same material could be taught just as effectively using actual information, paper, and pencil.

OTHER COMMENTS: The instructor must carefully prepare the students in the concepts involved and in how to do the simulation, games, and problem to be successful.

microSIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

What's In Your Lunch

VERSION: Apple, 1981

PRODUCER: Lawrence Hall of Science
University of California
MCEP
Berkeley, CA 94720

EVALUATION COMPLETED: June 1984 by the staff and constituents of Jefferson County Public Schools, Lakewood, Colorado.

COST: $24.95

ABILITY LEVEL: Grades 7 through 9
SUBJECT: Science, Health
TOPIC: Nutrition
MEDIUM OF TRANSFER: 5-1/4" disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor. Also available for PET, Atari, Commodore 64.
REQUIRED SOFTWARE: DOS 3.3 and Applesoft.
INSTRUCTIONAL PURPOSE: Enrichment.
INSTRUCTIONAL TECHNIQUES: Simulation.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting information, measuring, inferring, hypothesizing.

SCIENCE CONCEPTS INVOLVED: Quantification, population, cause-effect.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — instructional objectives, teacher's information, resource/reference information.

INSTRUCTIONAL OBJECTIVES: (INFERRED) To enable a student to determine the nutritional content and value of a lunch.

INSTRUCTIONAL PREREQUISITES: (INFERRED) Students need to know how to read a graph and know the meaning of a percentage.

CONTENT AND STRUCTURE: This package consists of one diskette and a teacher's guide. It is an interactive program that gives the user the nutrient value of a list of food items. Students input name, age, height and activity level. They look up menu items eaten for lunch and then find their code and enter it. The program then displays a graphical view of the percentage of daily calories, carbohydrates, proteins and other nutrients in the meal.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
	●				Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
●					Content presentation is clear and logical.
●					Difficulty level is appropriate to audience.
●					The package makes good use of computer time.
	●				Graphics/sound/color are used appropriately.
	●				Use of package is motivational.

SA	A	D	SD	NA	
		●			Student creativity is effectively stimulated.
	●				Feedback is effectively employed.
	●				Learner controls rate and sequence.
	●				Instruction integrates with prior learning.
	●				Learning can be generalized.
		●			User support materials are comprehensive.
		●			User support materials are effective.
		●			Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
	●				Computer capabilities are used appropriately.
	●				Program is reliable in normal use.

SA - Strongly Agree A - Agree D - Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was reasonable compared to its instructional value.

Evaluators indicated that they would use or recommend use of this package with little or no change.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 4, Technical Characteristics - 3.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

POTENTIAL USES: This package could be used as an enrichment activity to a study of nutrition. It could be used by a class in a computer lab or as part of another activtiy where students used only one or two computers and took turns. It is a highly individual program so kids can work alone.

ESTIMATED STUDENT TIME REQUIRED: One period (40-50 minutes) would be necessary for explanation, set up, discussion and computer time. Time on the computer would be about 10 minutes for one lunch the first time and five minutes thereafter.

MAJOR STRENGTHS: This program is very suitable for seventh and eighth grade students. It is motivational and easy to use. It is adaptable to many different types of sandwiches. The graphic display is readily understood in terms of daily requirement of nutrients.

MAJOR WEAKNESSES: More foods need to be included especially to include school lunch items. However, the program is not copy or list protected which would allow the teacher familiar with BASIC programming to make additions to the menu. A printout of results would be a good addition. In the background materials the use of 33% as a reference point is confusing.

micro SIFT COURSEWARE EVALUATION

This report made possible by a grant from SOHIO Corporate Contributions.

The criteria used for this evaluation have been customized to accommodate SCIENCE *courseware.*

Your Body — Series I & II

VERSION: Apple

PRODUCER: Focus Media, Inc.
839 Stewart Ave.
Garden City, NY 11530

EVALUATION COMPLETED: June 1984 by staff and constituents of Jefferson County Public Schools, Lakewood, Colorado.

COST: $119.00 for each series or $238.00 together.

ABILITY LEVEL: Grades 6 through 10
SUBJECT: Science, Biology
TOPIC: Human Organism, Digestive System, Blood, Circulatory System
MEDIUM OF TRANSFER: 5-1/4" flexible disk
REQUIRED HARDWARE: 48K Apple II, II+, IIe, or IIc, single disk drive, and monitor. Also available for TRS-80 Models III and IV, PET, and Commodore 64.
REQUIRED SOFTWARE: DOS 3.3 and Applesoft
INSTRUCTIONAL PURPOSE: Standard instruction.

INSTRUCTIONAL TECHNIQUES: Drill & practice, tutorial, game.
OTHER FEATURES: Content control.
SCIENCE PROCESSES INVOLVED: Acquiring information, interpreting data.

SCIENCE CONCEPTS INVOLVED: Organism, symmetry, interaction, cause-effect.

DOCUMENTATION AVAILABLE: In program — program operating instructions, student's instructions. In supplementary materials — instructional objectives, post-test, teacher's information, prerequisite skills/activities.

INSTRUCTIONAL OBJECTIVES: (STATED) To help students test their knowledge of human biology. Series I tests on the concepts of cells, tissues, organs, digestive system, blood, and circulatory system. Series II tests on the concepts of muscular system, skeletal system, brain, nervous system, and endocrine system.

continued on back →

EVALUATION SUMMARY

SA	A	D	SD	NA	
	●				Content is accurate.
	●				Content represents current knowledge of subject.
				●	Science issues presented objectively.
	●				Content has educational value.
		●			Science processes well integrated into package.
	●				Content is free of stereotypes.
	●				Purpose of package is well defined.
	●				Package achieves defined purpose.
	●				Content presentation is clear and logical.
		●			Difficulty level is appropriate to audience.
			●		The package makes good use of computer time.
		●			Graphics/sound/color are used appropriately.
		●			Use of package is motivational.

SA	A	D	SD	NA	
			●		Student creativity is effectively stimulated.
		●			Feedback is effectively employed.
	●				Learner controls rate and sequence.
		●			Instruction integrates with prior learning.
		●			Learning can be generalized.
	●				User support materials are comprehensive.
		●			User support materials are effective.
	●				Package components are durable.
		●			Information displays are effective.
	●				Users can operate easily and independently.
	●				Teachers can employ package easily.
		●			Computer capabilities are used appropriately.
		●			Program is reliable in normal use.

SA - Strongly Agree A-Agree D-Disagree SD - Strongly Disagree NA - Not Applicable

Evaluators judged that the cost of this package was unreasonable compared to its instructional value.

Evaluators indicated that they would not use or recommend this package.

Summary: Scale from 5 (High) to 1 (Low).
Content - 3, Instructional Characteristics - 2, Technical Characteristics - 3.

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This evaluation is based on the evaluations of three or more reviewers who are representative of potential users of the courseware package.

CONTENT AND STRUCTURE: Each series consists of four programs, Lesson Planner with documentation, and back-up disks. These series are multiple choice questions with tutorial help on the specific topics. THE HUMAN ORGANISM, in series I, provides a way for your students to reinforce their understanding of cells, tissues, organs, and systems of the human body. A money game-board provides an element of risk after each question. YOUR DIGESTIVE SYSTEM, in series I, has students test themselves on their knowledge of mechanical and chemical digestion and the parts of the digestive system as they travel through a graphic of the digestive system. YOUR BLOOD, in series I, ask students questions. Each correct answer about the purposes and components of blood results in another part of the human body being built. If answers are incorrect, extra help is available. The last program in series I, YOUR CIRCULATORY SYSTEM, is an auto race. If your students understand how the heart works, the role of the circulatory system, and the functions of the arteries, capillaries and veins, then they can win the Circulation Gran Prix Auto Race (For 1 or 2 players). YOUR MUSCULAR SYSTEM, in series II, user high resolution graphics and a "space" game to make your students want to reinforce concepts about various types of muscle tissue and how muscles work. YOUR SKELETAL SYSTEM, in series II, is a mountain climbing expedition. The functions and parts of the skeletal system are reinforced by means of questions about skeletal structure, bone, joints, cartilage, ligaments and more. YOUR NERVOUS SYSTEM & BRAIN, in series II, is a presentation with graphics of the brain, the cerebrum and a nerve cell, as well as many questions about the nervous system and the brain. Students bet money on one of 3 categories on this topic. The last program in series II, YOUR ENDOCRINE SYSTEM, is a computerized snowball fight. Students will see how much they know about the endocrine system, its major glands, and hormones.

POTENTIAL USES: This package could be used for drill and practice and for reviewing facts and information.

ESTIMATED STUDENT TIME REQUIRED: Thirty minutes per segment - four segments in each series.

MAJOR STRENGTHS: Help screens are available (in some segments) if the student makes an incorrect response. They are well organized in outline form and highlight key words. The questions are randomly generated and the order of some of the responses are sometimes rotated as well.

MAJOR WEAKNESSES: The program is largely a vocabulary drill which may not be appropriate to junior high students and could be done as effectively with pencil and paper. No provision is made to record the student scores for teacher uses. The sound on some of the programs is distracting in a classroom. The graphics are often unclear, hard to interpret and confusing. The program runs slowly because it accesses the disk often. This is very time consuming. Due to the "game" portion it is possible to respond correctly to all questions and still "lose" the game. The program segements are not consistent - some require a "return" to accept an answer, others do not.

MICROSIFT REVIEWS:SUBJECT 12/84

SUBJECT	TITLE	PRODUCER	HRD	LEVEL	SET
BASIC LIVING SKILLS	HOME SAFE HOME	MCE, INC.	AP	M H	1
	INCOME MEETS EXPENSES	MCE, INC.	AP	M H	1
	JOB READINESS: ASSMT. & DEV.	MCE, INC.	AP	M H	1
	MONEY MANAGEMENT ASSESSMENT	MCE, INC.	AP	M H	1
	POISON PROOF YOUR HOME	MCE, INC.	AP	M H	1
	YOU CAN BANK ON IT	MCE, INC.	AP	M H	1
BUSINESS EDUCATION	KEYBOARDING FOR INFORMATION	CONTROL DATA PUBLISHING CO.	AP	E M H	11
	LETTER MAN	BEHAVIORAL ENGINEERING	AP	E M	12
	MASTER TYPE	LIGHTNING SOFTWARE	AP	M H	8
	NUMERIC DATA ENTRY PRACTICE	RADIO SHACK EDUCATION DIVISION	RS	H	4
	THE MONEY MANAGER	STERLING SWIFT	AP	H	10
	TOUCH TYPING	COVE VIEW PRESS SOFTWARE	RS	M H	4
	TYPING STRATEGY	BEHAVIORAL ENGINEERING	AP	M H	12
	TYPING TUTOR	MICROSOFT CONSUMER PRODUCTS	AP	M H	2
CAREER EDUCATION	CAREER DIRECTIONS	SYSTEMS DESIGN ASSOCIATES	AP	H	8
	CAREER SCAN IV	NATIONAL EDUCATIONAL SOFTWARE	AP	M H	9
COMPUTER SCIENCE	BASIC PROGRAMMING	ORION TRAINING SYSTEMS	AP	M H	11
	COMPUTER LITERACY: INTRO.	CONTROL DATA PUBLISHING CO.	AP	M H	9
	DISCOVER BASIC	STERLING SWIFT	AP	M H	6
	KAREL THE ROBOT	CYBERTRONICS INTERNATIONAL	AP	H	3
	LOLLIPOP DRAGON	SVE	AP	P	11
	PERSONAL GRAPHICS	LITTLE, BROWN & CO.	AP	H	9
	RAINBOW GRAPHICS	BLUE HERRON SOFTWARE	AP	M H	10
	THE PROGRAMMABLE CUBE	METACOMET SOFTWARE	AP	H	6
LANGUAGE ARTS	ADVERTISING TECHNIQUES	MICRO POWER & LIGHT CO.	AP	M H	9
	ALPHABET KEYBOARD	RANDOM HOUSE, SCHOOL DIVISION	RS	P	3
	ALPINE SKIER	DATA COMMAND	AP	M	8
	ANTONYMS/SYNONYMS	HARTLEY COURSEWARE, INC.	AP	E M	5
	BASIC ENGLISH SKILLS	ENCYCLOPEDIA BRITANNICA	AP	M H	5
	BASIC ENGLISH SKILLS: SENTENCE	ENCYCLOPEDIA BRITANNICA	AP	E M	11
	BEGINNING COMPOSITION	BEHAVIORAL ENGINEERING	AP	M H	12
	BIG DOOR DEAL	DATA COMMAND	AP	M H	9
	BRIDGE TO TERABITHIA	SUNBURST COMMUNICATIONS	AP	M	8
	CALL OF THE WILD	A/V CONCEPTS CORPORATION	AP	E M	8
	CAPITALIZATION PLUS	MICROCOMPUTER WORKSHOPS	AP	E M H	11
	CARIS	ENCYCLOPEDIA BRITANNICA	AP	P	7
	CHAMBERS OF VOCAB	READER'S DIGEST SERVICES	AP	E M H	10
	CLOZE PLUS (CONTEXT ANALYSIS)	I/CT AND MILLIKEN	AP	P	9
	CLOZE-PLUS, LEVEL H	I/CT, INC.	AP	M	11
	COMPOSITION STRATEGY	BEHAVIORAL ENGINEERING	AP	M H	12
	COMPREHENSION POWER PROGRAM	I/CT AND MILLIKEN	AP	E M H	4
	CONSONANTS/BLENDS	HARTLEY COURSEWARE, INC.	AP	P	5
	CREATE SPELL-IT	HARTLEY COURSEWARE, INC.	AP	E M	5
	CREATE VOCABULARY	HARTLEY COURSEWARE, INC.	AP	E M	6
	DIASCRIPTIVE READING	EDUCATIONAL ACTIVITIES	AP	E M	8
	DIASCRIPTIVE READING I	EDUCATIONAL ACTIVITIES	AP	E	11
	EARL'S WORD POWER	GEORGE EARL	AP	E M H	7
	EARLY GAMES: MATCHMAKER	SPRINGBOARD SOFTWARE	AP	P	11
	ELECTRIC ENGLISH	TIES	AP	M	11
	ENGLISH COMPUTORIALS	EDUCULTURE	AP	H	4
	ENGLISH, VOLUME I	MECC	AP	M	8

MICROSIFT REVIEWS:SUBJECT 12/84

SUBJECT	TITLE	PRODUCER	MRD	LEVEL	SET
	FLOPPY TEACHES HOW TO PRINT	FLOPPY ENTERPRISES	AP	P	8
	FOUR-LETTER WORDS	CONDUIT	AP	M H	12
	GRAMMAR AND WRITING	ENCYCLOPEDIA BRITANNICA	AP	E	9
	GRAMMAR PACKAGE I	MICRO LEARNINGWARE	RS	E	4
	GRAMMAR PROBLEMS FOR PRCT.-HOM	MILLIKEN PUBLISHING COMPANY	AP	E M	4
	GREETING CARDS	COMPUTER SKILL BUILDERS	AP	E M H	11
	HOMONYMS IN CONTEXT	RANDOM HOUSE, SCHOOL DIVISION	AP	E M	4
	KEY LINGO	READER'S DIGEST SERVICES	AP	M H	11
	LETTER RECOGNITION	HARTLEY COURSEWARE, INC.	AP	P	5
	MAGIC SPELLS	THE LEARNING COMPANY	AP	E M	5
	MULTIPLE SKILLS	HARTLEY COURSEWARE, INC.	AP	P	6
	NOUNS/PRONOUNS	HARTLEY COURSEWARE, INC.	AP	E	5
	OUR WEIRD & WACKY WORLD: COMP	EDUCATIONAL ACTIVITIES	AP	E	6
	OUR WEIRD & WACKY WORLD: RDG	EDUCATIONAL ACTIVITIES	AP	E	6
	PHONET	TIES	AP	E	6
	PICNIC	COMPUTER SKILL BUILDERS	AP	E M H	12
	PIK-PEK-PUT	DATA COMMAND	AP	E M	9
	PROCESSING POWER PROGRAM	I/CT, INC.	AP	E	11
	PUNCTUATION SKILLS: COMMAS	MILTON-BRADLEY	AP	E M	10
	PUNCTUATION SKILLS: END MARKS	MILTON-BRADLEY	AP	E M	10
	READING FLIGHT	SCOTT, FORESMAN & CO.	TI	E	7
	READING RALLY	SCOTT, FORESMAN & CO.	TI	E	7
	READING ROUNDUP	SCOTT, FORESMAN & CO.	TI	E	7
	RHYMES AND RIDDLES	SPINNAKER SOFTWARE	AP	P	8
	RIDDLE ME THIS	DATA COMMAND	AP	E M	8
	ROOTS/AFFIXES	HARTLEY COURSEWARE, INC.	AP	E M	5
	SCHOLASTIC SPELLING	SCHOLASTIC	TI	E	11
	SENTENCE DIAGRAMMING	AVANT-GARDE CREATIONS	AP	M H	4
	SENTENCES	MICRO POWER & LIGHT CO.	AP	M H	4
	SHIP AHOY/WORD SCRAMBLE	COMPUTER SKILL BUILDERS	AP	E M H	12
	SIMS	TIES	AP	E	6
	SPECIAL NEEDS VOLUME 1: SPLLNG	MECC	AP	E	9
	SPEED READER	DAVIDSON AND ASSOCIATES	AP	M H	5
	SPELLING STRATEGY	BEHAVIORAL ENGINEERING	AP	E M	5
	SPELLING WIZ	DLM, INC.	AP	E	10
	STICKYBEAR ABC	WEEKLY READER FAMILY SOFTWARE	AP	P	11
	STORY MACHINE	SPINNAKER SOFTWARE	AP	P	8
	TANK TACTICS	DATA COMMAND	AP	E M H	9
	TENNIS ANYONE?	DATA COMMAND	AP	E M	8
	THAT'S MY STORY	LEARNING WELL	AP IBM	E M H	12
	THE ANTONYM GAME	J & S SOFTWARE	AP	H	10
	THE REEF OF GOLD	ENCYCLOPEDIA BRITANNICA	AP	E	11
	THE WESTING GAME	SUNBURST COMMUNICATIONS	AP	M	8
	VERB VIPER	DLM, INC.	AP	E	9
	VERBS	HARTLEY COURSEWARE, INC.	AP	E	5
	VOCABULARY DOLCH	HARTLEY COURSEWARE, INC.	AP	P	5
	VOCABULARY I, PLURALS, SENT.	COLORADO CYPHERNETICS	AP	E M	10
	VOCABULARY SKILLS: CONTEXT CLU	MILTON-BRADLEY	AP	M	8
	VOCABULARY SKILLS: PREF,SUF,RT	MILTON-BRADLEY	AP	M	8
	VOWELS	HARTLEY COURSEWARE, INC.	AP	E	6
	WHO, WHAT, WHERE, WHEN	HARTLEY COURSEWARE, INC.	AP	E	6
	WORD FAMILIES	HARTLEY COURSEWARE, INC.	AP	P	5
	WORD GAMES	MECC	AT	E	7
	WORD INVASION	DLM, INC.	AP	E M	9
	WORD MASTER	DLM, INC.	AP	M	8

MICROSIFT REVIEWS:SUBJECT 12/84

SUBJECT	TITLE	PRODUCER	HRD	LEVEL	SET
	WORD MEMORY PROGRAM	I/CT, INC.	AP	P	8
	WORD RADAR	DLM, INC.	AP	P	10
	WORD SEARCH	HARTLEY COURSEWARE, INC.	AP	E	5
	WORDMAN	DLM, INC.	AP	E	9
	WORDWATCH	INSTANT SOFTWARE	RS	M	4
	WORDWRIGHT	ENCYCLOPEDIA BRITANNICA	AP	E M H	7
LANGUAGES	FRENCH VOCABULARY BUILDER	CONTROL DATA PUBLISHING CO.	AP	M H	9
	GERMAN VOCABULARY BUILDER	CONTROL DATA PUBLISHING CO.	AP	M H	9
	LE VOCABULAIRE FRANCAIS	ISLAND SOFTWARE	AP	M H	9
	SPANISH VOCABULARY BUILDER	CONTROL DATA PUBLISHING CO.	AP	M H	9
	THE GERMAN/RUSSIAN HANGMAN	GEORGE EARL	AP	H	9
	THE SPANISH HANGMAN	GEORGE EARL	AP	M H	4
LIBRARIES	LIBRARY SKILLS: WHAT'S THERE	MICRO POWER & LIGHT CO.	AP	E M H	2
MATHEMATICS	ADDITION AND SUBTRACTION 1 & 2	SCOTT, FORESMAN & CO.	TI	P	3
	ALGEBRA ARCADE	WADSWORTH ELECTRONIC PUB.	AP	M H	12
	ALGEBRA DRILL AND PRACTICE II	CONDUIT	AP	M H	11
	ALIEN ADDITION	DLM, INC.	AP	E	3
	ALLIGATOR MIX	DLM, INC.	AP	E M	4
	APPLE$SURFACE	CONDUIT	AP	H	4
	APPROX, ESTIM. & STNDRD FORM	SCOTT, FORESMAN & CO.	AP	M P	L
	ARBPLOT	CONDUIT	AP	H	10
	ARITH-MAGIC	QED, INC.	AP	E M	7
	ARITHMETIC OF FUNCTIONS	MATH SOFTWARE	AP	H	2
	ARITHMETIC RACING	MATH SOFTWARE	AP	E M	2
	BASIC NUMBER FACTS	CONTROL DATA PUBLISHING CO.	AP	E	11
	BINOMIAL MULTIPLICATION	MATH SOFTWARE	AP	H	2
	BUDGETING SIMULATION	EMC PUBLISHING	AP	M H	12
	BUDGETING TUTORIAL	EMC PUBLISHING	AP	M H	12
	BUMBLE GAMES	THE LEARNING COMPANY	AP	E	7
	BUMBLE PLOT	THE LEARNING COMPANY	AP	E M	7
	CIRCUIT LAB	ATARI PROGRAM EXCHANGE	AT	M H	12
	CLOCK	HARTLEY COURSEWARE, INC.	AP	P	6
	COMPU-MATH: FRACTIONS	EDU-WARE SERVICES	AP	M H	10
	COMPUTER GRAPHING EXPERIMENTS	ADDISON-WESLEY PUBLISHING CO.	AP	H	6
	COMPUTER MATH ACTIVITIES, V-1	ADDISON-WESLEY PUBLISHING CO.	AP	E M	7
	COMPUTER MATH ACTIVITIES, V-2	ADDISON-WESLEY PUBLISHING CO.	AP	E M	7
	COMPUTER MATH ACTIVITIES, V-3	ADDISON-WESLEY PUBLISHING CO.	AP	E M	7
	COMPUTER MATH ACTIVITIES, V-4	ADDISON-WESLEY PUBLISHING CO.	AP	E M	7
	COMPUTER MATH ACTIVITIES, V-5	ADDISON-WESLEY PUBLISHING CO.	AP	E M	9
	COMPUTER MATH GAMES	ADDISON-WESLEY PUBLISHING CO.	AP	E M	6
	DECIMAL SKILLS	MILTON-BRADLEY	AP	E M	8
	DECIMALS	QED, INC.	AP	E M	10
	DECIMALS PRACTICE	CONTROL DATA PUBLISHING CO.	AP	E M	9
	DIVISION 1	SCOTT, FORESMAN & CO.	TI	E	7
	DIVISION SKILLS	MILTON-BRADLEY	AP	E M	10
	DRAGON MIX	DLM, INC.	AP	E M	7
	EARLY GAMES: FRACTION FACTORY	SPRINGBOARD SOFTWARE	AP	E M	11
	EARLY GAMES: PIECE OF CAKE	SPRINGBOARD SOFTWARE	AP	E M	11
	ELECTRONIC BLACKBOARD SERIES: ALGEBRA	WADSWORTH ELECTRONIC PUB.	AP	M H	12
	ELECTRONIC BLACKBOARD: FUNCT.	WADSWORTH ELECTRONIC PUB.	AP	H	10

SUBJECT	TITLE	PRODUCER	HRD	LEVEL	SET
	ELECTRONIC BLACKBOARD: TRIG.	WADSWORTH ELECTRONIC PUB.	AP	H	10
	ELECTRONIC STUDY GUIDE - SYSTEM OF EQUATIONS/INEQUALS	WADSWORTH ELECTRONIC PUB.	AP	M H	12
	ELECTRONIC STUDY GUIDE: D-I	WADSWORTH ELECTRONIC PUB.	AP	H	10
	ELECTRONIC STUDY GUIDE: D-II	WADSWORTH ELECTRONIC PUB.	AP	H	10
	ELECTRONIC STUDY GUIDE: D-III	WADSWORTH ELECTRONIC PUB.	AP	H	10
	ELECTRONIC STUDY GUIDE: D-IV	WADSWORTH ELECTRONIC PUB.	AP	H	10
	ELECTRONIC STUDY GUIDE: D-V	WADSWORTH ELECTRONIC PUB.	AP	H	10
	ELEMENTARY MATH	MECC	AP	E M	7
	ELEMENTARY MATHEMATICS CLASSROOM LEARNING SYST.: WHOLE NO.	STERLING SWIFT	AP	M	4
	EMSI-6	EDUCATIONAL MICROSYSTEMS	RS	E M	1
	ESSENTIAL MATH PROGRAM	RADIO SHACK EDUCATION DIVISION	RS	M H	4
	EUCLID GEOMETRY TUTOR	RADIO SHACK EDUCATION DIVISION	RS	H	4
	EXPANDED NOTATION	HARTLEY COURSEWARE, INC.	AP	E	6
	EXPLORER METROS: A METRIC ADV	SUNBURST COMMUNICATIONS	AP	E P	L
	FACTORING WHOLE NUMBERS	QED, INC.	AP	E M	1
	FRACTIONS	QED, INC.	AP	E M	1
	FRACTIONS PRACTICE	CONTROL DATA PUBLISHING CO.	AP	E M	9
	FUNCTION GRAPHER	MATH SOFTWARE	AP	M H	2
	FUNDAMENTAL MATH I, II, III	RANDOM HOUSE, SCHOOL DIVISION	RS	E M	4
	GRAPHING EQUATIONS	CONDUIT	AP	H	10
	INSTRUCTIONAL COMPUTING: ALG-2	PINELLAS COUNTY SCHOOL SYSTEM	AP	H	4
	INTRODUCTORY ALGEBRA	AVANT-GARDE CREATIONS	AP	M H	11
	LEMONADE	ATARI PROGRAM EXCHANGE	AT	E M	5
	LESSONS IN ALGEBRA	GEORGE EARL	AP	M	6
	LIMACONS AND THEIR AREAS	MATH SOFTWARE	AP	H	2
	LIMITS OF SEQUENCES	MATH SOFTWARE	AP	H	2
	LOGIC AND EUCLIDEAN GEOMETRY	AVANT-GARDE CREATIONS	AP	H	11
	MATH 1-2-3 FOUR PACK: COUNTING	MICRO-ED	CO	P	11
	MATH CONCEPTS	HARTLEY COURSEWARE, INC.	AP	E	5
	MATH FACTS/NUMBER & MATH HSTRY	COLORADO CYBERNETICS	AP	E	6
	MATH SEQUENCES	MILLIKEN PUBLISHING COMPANY	AP	E M	2
	MATH SKILLS: ELEMENTARY	ENCYCLOPEDIA BRITANNICA	AP	E	6
	MATH SKILLS: JUNIOR HIGH	ENCYCLOPEDIA BRITANNICA	AP	M	7
	MATH STRATEGY	BEHAVIORAL ENGINEERING	AP	E M	5
	MATH STRATEGY: LINEAR SEARCH	CREATIVE PUBLICATIONS	AP	M	3
	MATHEMATICS ASSMT/PRESC 5-7	READER'S DIGEST SERVICES	AP	E M	8
	MATHEMATICS DRILL AND PRACTICE	COMPAK, INC.	AP	E M	2
	MATHEMATICS FOR SCIENCE SERIES I AND II	MERLAN SCIENTIFIC	CO PET AP	E M H	L
	MATHEMATICS LIFE SKILLS, VOL 2 WORLD OF WORK	COMPUTER AGE EDUCATION	AP	M H	12
	MATHFISH	DENNIS SONIUS	CO	E	11
	MATHWIZ	MERRITT SOFTWARE	CO	E M	10
	METRIC DRILL	HARTLEY COURSEWARE, INC.	AP	E M	5
	MINUS MISSION	DLM, INC.	AP	E M	4
	MIXED NUMBERS	MILTON-BRADLEY	AP	E M	7

SUBJECT	TITLE	PRODUCER	HRD	LEVEL	SET
	MOPTOWN	THE LEARNING COMPANY	AP	E M	7
	MORE ALGEBRA: COMP	TYCOM ASSOCIATES	PET	H	4
	MORE ALGEBRA: DISC	TYCOM ASSOCIATES	PET	H	4
	MORE ALGEBRA: QUAD	TYCOM ASSOCIATES	PET	H	4
	MORE ALGEBRA: SIMUL	TYCOM ASSOCIATES	PET	H	4
	MORE ALGEBRA: SLOPE	TYCOM ASSOCIATES	PET	H	4
	NUMBER BLAST	ATARI PROGRAM EXCHANGE	AT	E M	4
	NUMBER BOWLING/SPACE JOURNEY	SCOTT, FORESMAN & CO.	TI	E M	12
	NUMBER WORDS, LEVEL 1	HARTLEY COURSEWARE, INC.	AP	E	6
	NUMBER WORDS, LEVEL 2	HARTLEY COURSEWARE, INC.	AP	E	6
	NUMERATION 1	SCOTT, FORESMAN & CO.	TI	P E	12
	NUMERATION 2	SCOTT, FORESMAN & CO.	TI	E	12
	PRESCRIPTIVE MATH DRILL	HARTLEY COURSEWARE, INC.	AP	E M	6
	PYRAMID PUZZLER	SCOTT, FORESMAN & CO.	TI	E	12
	READ AND SOLVE MATH PROBLEMS	EDUCATIONAL ACTIVITIES	AP	E	8
	SPECIAL PRODUCTS & ALG. FACTOR	AVANT-GARDE CREATIONS	AP	H	11
	SPEED/BINGO MATH	COMMODORE	CO	E M	11
	STAR MAZE	SCOTT, FORESMAN & CO.	TI	E	12
	STICKYBEAR NUMBERS	WEEKLY READER FAMILY SOFTWARE	AP	P	9
	SUBTRACTING MIXED FRACTIONS	MICROCOMPUTER WORKSHOPS	AP	E M	10
	TEASERS BY TOBBS	SUNBURST COMMUNICATIONS	AP	E M	8
	THE ARITHMETIC CLASSROOM: DEC	STERLING SWIFT	AP	E M	5
	THE ARITHMETIC CLASSROOM: FRAC	STERLING SWIFT	AP	E M	5
	THE KING'S RULE	SUNBURST COMMUNICATIONS	AP CO RS	E M H P	L
	WHOLE NUMBERS PRACTICE	CONTROL DATA PUBLISHING CO.	AP	E M	9
MISC.	ALIEN ACTION	DLM, INC.	AP	E	11
	ALLIGATOR ALLEY	DLM, INC.	AP	VARIES	12
	FACEMAKER	SPINNAKER SOFTWARE	AP	P	8
	IDEA INVASION	DLM, INC.	AP	VARIES	12
	KRELL'S COLLEGE BOARD SAT	KRELL	AP	H	7
	QUIZAGON	SPRINGBOARD SOFTWARE	AP	H	11
	WIZ WORKS	DLM, INC.	AP	VARIES	12
MUSIC	EARLY GAMES: MUSIC	SPRINGBOARD SOFTWARE	AP	E	11
	KEYBOARD ORGAN	ATARI PROGRAM EXCHANGE	AT	M H	5
NUTRITION	EAT SMART	THE PILLSBURY COMPANY	AP	M P	L
	NUTRITION AND FOOD GROUPS	MECC	AP IBM	M	L
	NUTRITION SIMULATION	EMC PUBLISHING	AP	M H	12
	NUTRITION TUTORIAL	EMC PUBLISHING	AP	M H	12
	NUTRITION-A BALANCED DIET	EDUCATIONAL MATERIALS & EQ.	AP	M H	L
	THE FOOD PROCESSOR	ESHA RESEARCH	AP	M H	L
	WHAT'S IN YOUR LUNCH	LAWRENCE HALL OF SCIENCE	AP PET AT CO	M H	L
PHYSICAL EDUCATION	50 DEFENSE VS RUN	STERLING SWIFT	AP	M H	12
	SPORTS STATS	TIES	AP	M H	9
PROBLEM SOLVING	CAUSE AND EFFECT	MARSHWARE/MARSHFILM	AP	E P	L
	CHECKERS	ODESTA	AP	E M H	6
	CHESS	ODESTA	AP	E M H	6
	COMP-U-SOLVE	EDUCATIONAL ACTIVITIES	AP RS CO	P H	L
	FUN HOUSE MAZE	SUNBURST COMMUNICATIONS	AP	E H	L
	MIND BENDERS, A3	MIDWEST PUBLICATIONS	AP	E M H	9
	MIND BENDERS, B1	MIDWEST PUBLICATIONS	AP	E M H	9

SUBJECT	TITLE	PRODUCER	HRD	LEVEL	SET
	ODIN	ODESTA	AP	E M H	6
	PROBLEM SOLVING STRATEGIES	MECC	AP	E M	L
	SEM CALC: WORD PROBLEM SOLVER	SUNBURST COMMUNICATIONS	RS AP AT	M H	L
	THE FACTORY	SUNBURST COMMUNICATIONS	AT AP CO RS IBM	E H	L
		SUNBURST COMMUNICATIONS	AT	E M H	9
READINESS	EARLY GAMES FOR YOUNG CHILDREN	SPRINGBOARD SOFTWARE	AP	P	11
	FLOPPY TEACHES WHAT IS MISSING	FLOPPY ENTERPRISES	AP	P	11
	JUGGLES' RAINBOW	THE LEARNING COMPANY	AP	P	6
	MY FIRST ALPHABET	ATARI, INC.	AT	P	4
	SAME AND DIFFERENT	FLOPPY ENTERPRISES	AP	P	11
SCIENCES	ACID RAIN	DIVERSIFIED EDUCATIONAL ENT.	AP	E M H	L
	AIR POLLUTION	EDUCATIONAL MATERIALS & EQ.	AP RS	M H	L
	ASTRONOMY: STARS FOR ALL SEASO	EDUCATIONAL ACTIVITIES	AP RS CO	E H	L
	ATARILAB	ATARI, INC.	AT	E P	L
	BAFFLES	CONDUIT	AP	M P	L
	BIOLOGY: ENERGY AND LIFE	ENCYCLOPEDIA BRITANNICA	AP	M	10
	BIOLOGY: THE CELL	ENCYCLOPEDIA BRITANNICA	AP	M	9
	BIOMES AND FOOD WEBS	YAKER EDUCATIONAL SYSTEMS	AP	M H	L
	BODY SYSTEMS	MICRO-ED	CO	E M	L
	CELL GROWTH AND MITOSIS	CLASSROOM CONSORTIA MEDIA	IBM	M P	L
	CHARACTERISTICS OF A SCIENTIST	CYGNUS SOFTWARE	AP	M H	L
	CHARGED PARTICLES II	VERNIER SOFTWARE	AP	M H	12
	CHEMAID	VENTURA EDUCATIONAL SYSTEMS	AP	M H	L
	CHEMICAL ELEMENT GAME	SCOTT, FORESMAN & CO.	AP	E P	L
	CHEMISTRY: ACIDS AND BASES	ENCYCLOPEDIA BRITANNICA	AP	M	7
	CIRCULATION (ORGANS)	MICRO POWER & LIGHT CO.	AP	E M H	2
	CLASSIFICATION	MECC	AP	E M H	L
	CLASSIFICATION OF LIVING THNGS	EDUCATIONAL ACTIVITIES	AP CO	M H	L
	CLASSIFY	DIVERSIFIED EDUCATIONAL ENT.	AP	H	11
	CLIMATE	SCOTT, FORESMAN & CO.	AP	M P	L
	COMPUTER BIOLOGY LAB: FROG	CROSS EDUCATIONAL SOFTWARE	AP	M H	L
	COMPUTER SIMULATED PHYSICS EXP	EDUTECH	AP	H	4
	CONNECTIONS	KRELL	AP	M H	L
	DISCOVERING THE SCIENTIFIC METHOD	FOCUS MEDIA	AP RS	E M H	L
	DISCOVERY LAB	MECC	AP	E M H	L
	EARTH SCIENCE	MECC	AT	E M	L
	EARTH SCIENCE SERIES	TYC SOFTWARE	RS	M H	L
	ENERGY AND POWER	MICRO ED	CO	E M H	L
	ENERGY CZAR	ATARI, INC.	AT	M H	4
	ENERGY HOUSE	TIES	AP	E M	L
	ENERGY SEARCH	MC GRAW HILL	AP	E H	L
	ENERGY SERIES	FOCUS MEDIA	AP RS PET CO	M H	L
	EVOLUT	CONDUIT	AP	H	4
	EXPER. IN HUMAN PHYSIOLOGY	HRM SOFTWARE	AP	M P	L
	EXPERIMENTS IN SCIENCE	HRM SOFTWARE	AP	M P	L
	GENETICS	TIES	AP	E M	L
		TIES	AP	E M	9
	GEOLOGY SEARCH	MC GRAW HILL	AP RS	E H	L
	GRAPHS AND CHARTS	MICRO-ED	CO	E M	L
	HAWS: HOME AUTOMATIC WEATHER	VAISALA	CO	M H	L

SUBJECT	TITLE	PRODUCER	HRD	LEVEL	SET
	STATION				
	HEALTH AWARENESS GAMES	HRM SOFTWARE	AP	M P	L
	HEREDITY DOG	HRM SOFTWARE	AP	M	L
	HOME ENERGY CONSERVATION	EDUCATIONAL MATERIALS & EQ.	AP	M H	L
	HOME ENERGY SAVINGS	HRM SOFTWARE	AP RS	M H	L
	IN SEARCH OF MOST AMAZING THNG	SPINNAKER SOFTWARE	AT AP	M H	L
	INTERPRETING GRAPHS	CONDUIT	AP	M H	L
	INTROD. TO GENERAL CHEMISTRY	COMPRESS	AP	M P	L
	KINEMATICS II	VERNIER SOFTWARE	AP	M H	12
	LAWS OF MOTION	EDUCATIONAL MATERIALS & EQ.	AP	M H	L
	LEAF: STRUCTURE & FUNCTION	CLASSROOM CONSORTIA MEDIA	IBM	M P	L
	LIMITING FACTORS AND CARRYING CAPACITY	YAKER EDUCATIONAL SYSTEMS	AP	M H	L
	LOGIC GATES	TIES	AP	H	11
	MATTER AND ENERGY	FOCUS MEDIA	AP RS PET CO	M H	L
	METRIC I TO V	CLASSROOM CONSORTIA MEDIA	IBM	M H	L
	MILLIKAN	MENTOR SOFTWARE, INC.	AP	H	4
	MODELING	MECC	AP IBM	M	L
	NEWTON	CONDUIT	AP	H	4
	NICHE: AN ECOLOGICAL GAME/SIMULATION	DIVERSIFIED EDUCATIONAL ENT.	AP RS	M H	L
	ODELL LAKE	MECC	AP	E M	2
	OH, DEER!	MECC	AP	M	L
	ORBIT II	VERNIER SOFTWARE	AP	M H	12
	PASSIVE TRANSPORT	CLASSROOM CONSORTIA MEDIA	IBM	E P	L
	PERSONAL ENERGY INVENTORY	HRM SOFTWARE	AP RS	M P	L
	PHOTOSYNTHESIS LIGHT ENERGY	CLASSROOM CONSORTIA MEDIA	IBM	M P	L
	PHYSICAL SCI BASEBALL-CHMSTRY	J & S SOFTWARE	AP	M H	L
	PHYSICAL SCI PROG/BONDING	J & S SOFTWARE	AP	M	L
	PHYSICAL SCI PROG/RADIOACTIVIT	J & S SOFTWARE	AP	M	L
	PHYSICAL SCIENCE SERIES	MICROPHYS	CO AP	M	L
	PHYSICS GEMS, VOLUME 12	CROSS EDUCATIONAL SOFTWARE	AP	M H	L
	PHYSICS: ELEMENTARY MECHANICS	CONTROL DATA PUBLISHING CO.	AP	H	9
	PLANT GROWTH	CLASSROOM CONSORTIA MEDIA	IBM	M P	L
	PLATO'S CAVE	KRELL	AP	M H	L
	POLLUTE/A SIM OF WATER POLLUT	DIVERSIFIED EDUCATIONAL ENT.	AP RS IBM	H	L
	POND ECOLOGY	SCOTT, FORESMAN & CO.	AP	E P	L
	POWER GRID	HRM SOFTWARE	AP RS	M H	L
	PRECISION TIMER	VERNIER SOFTWARE	AP	H	7
	PROJECTILES II	VERNIER SOFTWARE	AP	M H	12
	PROTOZOA	VENTURA EDUCATIONAL SYSTEMS	AP	M H	L
	ROBOT ODYSSEY I	THE LEARNING COMPANY	AP	M H	L
	ROCKY'S BOOTS	THE LEARNING COMPANY	AP IBM CO	E P	L
		THE LEARNING COMPANY	AP	E M H	6
	SCALES	SCOTT, FORESMAN & CO.	AP	M P	L
	SCIENCE CHALLENGES	MICRO-ED	CO	E M	L
	SIMPLE MACHINES	MICRO ED	CO	E M H	L
	SKY TRAVEL: A WINDOW TO OUR GALAXY	COMMODORE	CO	M H	L

SUBJECT	TITLE	PRODUCER	HRD	LEVEL	SET
	STAR SEARCH	EARTHWARE COMPUTER SERVICES	AP	M H	L
	STELLAR ASTRONOMY	CROSS EDUCATIONAL SOFTWARE	AP	M H	L
	TELLSTAR	SCHARF SOFTWARE SYSTEMS	AP	M H	12
	TEMPERATURE GRAPHER	HRM SOFTWARE	AP	M H	L
	THE ATOM	MICRO-ED	AP	H	6
	THE HEART STIMULATOR	FOCUS MEDIA	AP	E H	L
	THE INCREDIBLE LABORATORY	SUNBURST COMMUNICATIONS	AT AP CO	E P	L
	THE MICRO GARDENER	EDUCATIONAL ACTIVITIES INC.	AP	E P	L
	THE SCIENTIFIC METHOD	CYGNUS SOFTWARE	AP	M H	L
	THE SKIES ABOVE/THE WATERS BELOW	AQUARIUS	AP	E M H	L
	THE VOYAGE OF THE MIMI: MAPS AND NAVAGATION	HOLT, RINEHART & WINSTON	AP	E M	L
	THE WORM	VENTURA EDUCATIONAL SYSTEMS	AP	M H	L
	THINK LIKE A SCIENTIST	MICRO LEARN	AP CO IBM	E H	L
	THREE MILE ISLAND	MUSE SOFTWARE	AP	H	6
	TIME & SEASONS	RAND MCNALLY AND COMPANY	AP AT	M H	L
	TITRATION	MENTOR SOFTWARE, INC.	AP	H	4
	TRIBBLES	CONDUIT	AP	M H	12
	VECTOR ADDITION II	VERNIER SOFTWARE	AP	M H	12
	VECTORS AND GRAPHING, VOL. 1	CROSS EDUCATIONAL SOFTWARE	AP	H	11
	VISIBLE SOLAR SYSTEM	COMMODORE	CO	E M	L
	VISIFROG	VENTURA EDUCATIONAL SYSTEMS	AP	M H	L
	VOLCANOES	EARTHWARE COMPUTER SERVICES	AP	H	3
	WATER POLLUTION	EDUCATIONAL MATERIALS & EQ.	AP RS	M H	L
	WAVE ADDITION II	VERNIER SOFTWARE	AP	H	12
	WEATHER	SCOTT, FORESMAN & CO.	AP	H P	L
	WEATHER COMMAND:A SCIENCE GAME	EDUCATIONAL AUDIO VISUAL	AP	E H	L
	WEATHER FACTORS	MICRO-ED	CO	E M H	L
	YOUR BODY - SERIES I & II	FOCUS MEDIA	AP RS PET CO	E H	L
SOCIAL STUDIES	CARTELS AND CUTTHROATS	STRATEGIC SIMULATIONS, INC.	AP	H	8
	DEMO-GRAPHICS	CONDUIT	AP	H	4
	ELEMENTARY VOLUME 6: SOC. ST.	MECC	AP	E M	8
	GEOGRAPHY	MECC	AT	E M	7
	GEOGRAPHY EXPLORER: USA	INSTANT SOFTWARE	RS	M H	1
	MAP READING	MICRO POWER & LIGHT CO.	AP	E M	8
	PRESIDENT ELECT	STRATEGIC SIMULATIONS, INC.	AP	M H	8
	RAILS WEST!	STRATEGIC SIMULATIONS, INC.	AP	M H	11
	SOCIAL STUDIES, VOLUME 2	MECC	AP	M H	8
	THE DECISION SHOP	THE CHILDREN'S MUSEUM OF IND.	AP	E M	7
	THE EXPLORING AMERICA SERIES	AQUARIUS	AP	M H	9
	THE MARKET PLACE	MECC	AT	E M	7
	THE MEDALIST - STATES	HARTLEY COURSEWARE, INC.	AP	E M	11
	U.S. CONSTITUTION TUTOR	MICRO LEARN	CO	M H	11
TEACHER UTILITY	CREATE FILL-IN-THE-BLANKS	HARTLEY COURSEWARE, INC.	AP	E	5
	CREATE SKILLS: ELEM./INT.	HARTLEY COURSEWARE, INC.	AP	E	5
	EASY GRADER	ATARI PROGRAM EXCHANGE	AT	E M H	5
	THE SHELL GAMES	APPLE COMPUTER	AP	E M H	1
	THE WIZARD	PROGRAMS UNLIMITED	RS	M H	3
TESTING	TEST BANK	ADVANCED TECHNOLOGY APPLIC.	RS	E M H	5

MICROSIFT REVIEWS: TITLE 12/84

TITLE	PRODUCER	HRD	LEVEL	SUBJECT	SET
50 DEFENSE VS RUN	STERLING SWIFT	AP	M H	PHYSICAL EDUCATION	12
ACID RAIN	DIVERSIFIED EDUCATIONAL ENT.	AP	E M H	SCIENCES	L
ADDITION AND SUBTRACTION 1 & 2	SCOTT, FORESMAN & CO.	TI	P	MATHEMATICS	3
ADVERTISING TECHNIQUES	MICRO POWER & LIGHT CO.	AP	M H	LANGUAGE ARTS	9
AIR POLLUTION	EDUCATIONAL MATERIALS & EQ.	AP RS	M H	SCIENCES	L
ALGEBRA ARCADE	WADSWORTH ELECTRONIC PUB.	AP	M H	MATHEMATICS	12
ALGEBRA DRILL AND PRACTICE II	CONDUIT	AP	M H	MATHEMATICS	11
ALIEN ACTION	DLM, INC.	AP	E	MISC.	11
ALIEN ADDITION	DLM, INC.	AP	E	MATHEMATICS	3
ALLIGATOR ALLEY	DLM, INC.	AP	VARIES	MISC.	12
ALLIGATOR MIX	DLM, INC.	AP	E M	MATHEMATICS	4
ALPHABET KEYBOARD	RANDOM HOUSE, SCHOOL DIVISION	RS	P	LANGUAGE ARTS	3
ALPINE SKIER	DATA COMMAND	AP	M	LANGUAGE ARTS	8
ANTONYMS/SYNONYMS	HARTLEY COURSEWARE, INC.	AP	E M	LANGUAGE ARTS	5
APPLE#SURFACE	CONDUIT	AP	H	MATHEMATICS	4
APPROX, ESTIM. & STNDRD FORM	SCOTT, FORESMAN & CO.	AP	M P	MATHEMATICS	L
ARBPLOT	CONDUIT	AP	M	MATHEMATICS	10
ARITH-MAGIC	QED, INC.	AP	E M	MATHEMATICS	7
ARITHMETIC OF FUNCTIONS	MATH SOFTWARE	AP	H	MATHEMATICS	2
ARITHMETIC RACING	MATH SOFTWARE	AP	E M	MATHEMATICS	2
ASTRONOMY: STARS FOR ALL SEASO	EDUCATIONAL ACTIVITIES	AP RS CO	E H	SCIENCES	L
ATARILAB	ATARI, INC.	AT	E P	SCIENCES	L
BAFFLES	CONDUIT	AP	M P	SCIENCES	L
BASIC ENGLISH SKILLS	ENCYCLOPEDIA BRITANNICA	AP	M H	LANGUAGE ARTS	5
BASIC ENGLISH SKILLS: SENTENCE	ENCYCLOPEDIA BRITANNICA	AP	E M	LANGUAGE ARTS	11
BASIC NUMBER FACTS	CONTROL DATA PUBLISHING CO.	AP	E	MATHEMATICS	11
BASIC PROGRAMMING	ORION TRAINING SYSTEMS	AP	M H	COMPUTER SCIENCE	11
BEGINNING COMPOSITION	BEHAVIORAL ENGINEERING	AP	M H	LANGUAGE ARTS	12
BIG DOOR DEAL	DATA COMMAND	AP	M H	LANGUAGE ARTS	9
BINOMIAL MULTIPLICATION	MATH SOFTWARE	AP	H	MATHEMATICS	2
BIOLOGY: ENERGY AND LIFE	ENCYCLOPEDIA BRITANNICA	AP	H	SCIENCES	10
BIOLOGY: THE CELL	ENCYCLOPEDIA BRITANNICA	AP	H	SCIENCES	9
BIOMES AND FOOD WEBS	YAKER EDUCATIONAL SYSTEMS	AP	M H	SCIENCES	L
BODY SYSTEMS	MICRO-ED	CO	E M	SCIENCES	L
BRIDGE TO TERABITHIA	SUNBURST COMMUNICATIONS	AP	M	LANGUAGE ARTS	8
BUDGETING SIMULATION	EMC PUBLISHING	AP	M H	MATHEMATICS	12
BUDGETING TUTORIAL	EMC PUBLISHING	AP	M H	MATHEMATICS	12
BUMBLE GAMES	THE LEARNING COMPANY	AP	E	MATHEMATICS	7
BUMBLE PLOT	THE LEARNING COMPANY	AP	E M	MATHEMATICS	7
CALL OF THE WILD	A/V CONCEPTS CORPORATION	AP	E M	LANGUAGE ARTS	8
CAPITALIZATION PLUS	MICROCOMPUTER WORKSHOPS	AP	E M H	LANGUAGE ARTS	11
CAREER DIRECTIONS	SYSTEMS DESIGN ASSOCIATES	AP	H	CAREER EDUCATION	8
CAREER SCAN IV	NATIONAL EDUCATIONAL SOFTWARE	AP	M H	CAREER EDUCATION	9
CARIS	ENCYCLOPEDIA BRITANNICA	AP	P	LANGUAGE ARTS	7
CARTELS AND CUTTHROATS	STRATEGIC SIMULATIONS, INC.	AP	H	SOCIAL STUDIES	8
CAUSE AND EFFECT	MARSHWARE/MARSHFILM	AP	E P	PROBLEM SOLVING	L
CELL GROWTH AND MITOSIS	CLASSROOM CONSORTIA MEDIA	IBM	M P	SCIENCES	L
CHAMBERS OF VOCAB	READER'S DIGEST SERVICES	AP	E M H	LANGUAGE ARTS	10
CHARACTERISTICS OF A SCIENTIST	CYGNUS SOFTWARE	AP	M H	SCIENCES	L
CHARGED PARTICLES II	VERNIER SOFTWARE	AP	M H	SCIENCES	12
CHECKERS	ODESTA	AP	E M H	PROBLEM SOLVING	6
CHEMAID	VENTURA EDUCATIONAL SYSTEMS	AP	M H	SCIENCES	L
CHEMICAL ELEMENT GAME	SCOTT, FORESMAN & CO.	AP	E P	SCIENCES	L
CHEMISTRY: ACIDS AND BASES	ENCYCLOPEDIA BRITANNICA	AP	H	SCIENCES	7
CHESS	ODESTA	AP	E M H	PROBLEM SOLVING	6

MICROSIFT REVIEWS: TITLE 12/84

TITLE	PRODUCER	HRD	LEVEL	SUBJECT	SET
CIRCUIT LAB	ATARI PROGRAM EXCHANGE	AT	M H	MATHEMATICS	12
CIRCULATION (ORGANS)	MICRO POWER & LIGHT CO.	AP	E M H	SCIENCES	2
CLASSIFICATION	MECC	AP	E M H	SCIENCES	L
CLASSIFICATION OF LIVING THNGS	EDUCATIONAL ACTIVITIES	AP CO	M H	SCIENCES	L
CLASSIFY	DIVERSIFIED EDUCATIONAL ENT.	AP	H	SCIENCES	11
CLIMATE	SCOTT, FORESMAN & CO.	AP	M P	SCIENCES	L
CLOCK	HARTLEY COURSEWARE, INC.	AP	P	MATHEMATICS	6
CLOZE PLUS (CONTEXT ANALYSIS)	I/CT AND MILLIKEN	AP	P	LANGUAGE ARTS	9
CLOZE-PLUS, LEVEL H	I/CT, INC.	AP	M	LANGUAGE ARTS	11
COMP-U-SOLVE	EDUCATIONAL ACTIVITIES	AP RS CO	P H	PROBLEM SOLVING	L
COMPOSITION STRATEGY	BEHAVIORAL ENGINEERING	AP	M H	LANGUAGE ARTS	12
COMPREHENSION POWER PROGRAM	I/CT AND MILLIKEN	AP	E M H	LANGUAGE ARTS	4
COMPU-MATH: FRACTIONS	EDU-WARE SERVICES	AP	M H	MATHEMATICS	10
COMPUTER BIOLOGY LAB: FROG	CROSS EDUCATIONAL SOFTWARE	AP	M H	SCIENCES	L
COMPUTER GRAPHING EXPERIMENTS	ADDISON-WESLEY PUBLISHING CO.	AP	H	MATHEMATICS	6
COMPUTER LITERACY: INTRO.	CONTROL DATA PUBLISHING CO.	AP	M H	COMPUTER SCIENCE	9
COMPUTER MATH ACTIVITIES, V-1	ADDISON-WESLEY PUBLISHING CO.	AP	E M	MATHEMATICS	7
COMPUTER MATH ACTIVITIES, V-2	ADDISON-WESLEY PUBLISHING CO.	AP	E M	MATHEMATICS	7
COMPUTER MATH ACTIVITIES, V-3	ADDISON-WESLEY PUBLISHING CO.	AP	E M	MATHEMATICS	7
COMPUTER MATH ACTIVITIES, V-4	ADDISON-WESLEY PUBLISHING CO.	AP	E M	MATHEMATICS	7
COMPUTER MATH ACTIVITIES, V-5	ADDISON-WESLEY PUBLISHING CO.	AP	E M	MATHEMATICS	9
COMPUTER MATH GAMES	ADDISON-WESLEY PUBLISHING CO.	AP	E M	MATHEMATICS	6
COMPUTER SIMULATED PHYSICS EXP	EDUTECH	AP	H	SCIENCES	4
CONNECTIONS	KRELL	AP	M H	SCIENCES	L
CONSONANTS/BLENDS	HARTLEY COURSEWARE, INC.	AP	P	LANGUAGE ARTS	5
CREATE FILL-IN-THE-BLANKS	HARTLEY COURSEWARE, INC.	AP	E	TEACHER UTILITY	5
CREATE SKILLS: ELEM./INT.	HARTLEY COURSEWARE, INC.	AP	E	TEACHER UTILITY	5
CREATE SPELL-IT	HARTLEY COURSEWARE, INC.	AP	E M	LANGUAGE ARTS	5
CREATE VOCABULARY	HARTLEY COURSEWARE, INC.	AP	E M	LANGUAGE ARTS	6
DECIMAL SKILLS	MILTON-BRADLEY	AP	E M	MATHEMATICS	8
DECIMALS	QED, INC.	AP	E M	MATHEMATICS	10
DECIMALS PRACTICE	CONTROL DATA PUBLISHING CO.	AP	E M	MATHEMATICS	9
DEMO-GRAPHICS	CONDUIT	AP	H	SOCIAL STUDIES	4
DIASCRIPTIVE READING	EDUCATIONAL ACTIVITIES	AP	E M	LANGUAGE ARTS	8
DIASCRIPTIVE READING I	EDUCATIONAL ACTIVITIES	AP	E	LANGUAGE ARTS	11
DISCOVER BASIC	STERLING SWIFT	AP	M H	COMPUTER SCIENCE	6
DISCOVERING THE SCIENTIFIC METHOD	FOCUS MEDIA	AP RS	E M H	SCIENCES	L
DISCOVERY LAB	MECC	AP	E M H	SCIENCES	L
DIVISION 1	SCOTT, FORESMAN & CO.	TI	E	MATHEMATICS	7
DIVISION SKILLS	MILTON-BRADLEY	AP	E M	MATHEMATICS	10
DRAGON MIX	DLM, INC.	AP	E M	MATHEMATICS	7
EARL'S WORD POWER	GEORGE EARL	AP	E M H	LANGUAGE ARTS	7
EARLY GAMES FOR YOUNG CHILDREN	SPRINGBOARD SOFTWARE	AP	P	READINESS	11
EARLY GAMES: FRACTION FACTORY	SPRINGBOARD SOFTWARE	AP	E M	MATHEMATICS	11
EARLY GAMES: MATCHMAKER	SPRINGBOARD SOFTWARE	AP	P	LANGUAGE ARTS	11
EARLY GAMES: MUSIC	SPRINGBOARD SOFTWARE	AP	E	MUSIC	11
EARLY GAMES: PIECE OF CAKE	SPRINGBOARD SOFTWARE	AP	E M	MATHEMATICS	11
EARTH SCIENCE	MECC	AT	E M	SCIENCES	L
EARTH SCIENCE SERIES	TYC SOFTWARE	RS	M H	SCIENCES	L
EASY GRADER	ATARI PROGRAM EXCHANGE	AT	E M H	TEACHER UTILITY	5
EAT SMART	THE PILLSBURY COMPANY	AP	M P	NUTRITION	L
ELECTRIC ENGLISH	TIES	AP	M	LANGUAGE ARTS	11

TITLE	PRODUCER	HRD	LEVEL	SUBJECT	SET
ELECTRONIC BLACKBOARD SERIES: ALGEBRA	WADSWORTH ELECTRONIC PUB.	AP	M H	MATHEMATICS	12
ELECTPONIC BLACKBOARD: FUNCT.	WADSWORTH ELECTRONIC PUB.	AP	H	MATHEMATICS	10
ELECTRONIC BLACKBOARD: TRIG.	WADSWORTH ELECTRONIC PUB.	AP	H	MATHEMATICS	10
ELECTRONIC STUDY GUIDE - SYSTEM OF EQUATIONS/INEQUALS	WADSWORTH ELECTRONIC PUB.	AP	M H	MATHEMATICS	12
ELECTRONIC STUDY GUIDE: D-I	WADSWORTH ELECTRONIC PUB.	AP	H	MATHEMATICS	10
ELECTRONIC STUDY GUIDE: D-II	WADSWORTH ELECTRONIC PUB.	AP	H	MATHEMATICS	10
ELECTRONIC STUDY GUIDE: D-III	WADSWORTH ELECTRONIC PUB.	AP	H	MATHEMATICS	10
ELECTRONIC STUDY GUIDE: D-IV	WADSWORTH ELECTRONIC PUB.	AP	H	MATHEMATICS	10
ELECTRONIC STUDY GUIDE: D-V	WADSWORTH ELECTRONIC PUB.	AP	H	MATHEMATICS	10
ELEMENTARY MATH	MECC	AP	E M	MATHEMATICS	7
ELEMENTARY MATHEMATICS CLASSROOM LEARNING SYST.: WHOLE NO.	STERLING SWIFT	AP	M	MATHEMATICS	4
ELEMENTARY VOLUME 6: SOC. ST.	MECC	AP	E M	SOCIAL STUDIES	8
EMSI-6	EDUCATIONAL MICROSYSTEMS	RS	E M	MATHEMATICS	1
ENERGY AND POWER	MICRO ED	CO	E M H	SCIENCES	L
ENERGY CZAR	ATARI, INC.	AT	M H	SCIENCES	4
ENERGY HOUSE	TIES	AP	E M	SCIENCES	L
ENERGY SEARCH	MC GRAW HILL	AP	E H	SCIENCES	L
ENERGY SERIES	FOCUS MEDIA	AP RS PET CO	M H	SCIENCES	L
ENGLISH COMPUTORIALS	EDUCULTURE	AP	H	LANGUAGE ARTS	4
ENGLISH, VOLUME 1	MECC	AP	M	LANGUAGE ARTS	8
ESSENTIAL MATH PROGRAM	RADIO SHACK EDUCATION DIVISION	RS	M H	MATHEMATICS	4
EUCLID GEOMETRY TUTOR	RADIO SHACK EDUCATION DIVISION	RS	H	MATHEMATICS	4
EVOLUT	CONDUIT	AP	H	SCIENCES	4
EXPANDED NOTATION	HARTLEY COURSEWARE, INC.	AP	E	MATHEMATICS	6
EXPER. IN HUMAN PHYSIOLOGY	HRM SOFTWARE	AP	M P	SCIENCES	L
EXPERIMENTS IN SCIENCE	HRM SOFTWARE	AP	M P	SCIENCES	L
EXPLORER METROS: A METRIC ADV	SUNBURST COMMUNICATIONS	AP	E P	MATHEMATICS	L
FACEMAKER	SPINNAKER SOFTWARE	AP	P	MISC.	8
FACTORING WHOLE NUMBERS	QED, INC.	AP	E M	MATHEMATICS	1
FLOPPY TEACHES HOW TO PRINT	FLOPPY ENTERPRISES	AP	P	LANGUAGE ARTS	8
FLOPPY TEACHES WHAT IS MISSING	FLOPPY ENTERPRISES	AP	P	READINESS	11
FOUR-LETTER WORDS	CONDUIT	AP	M H	LANGUAGE ARTS	12
FRACTIONS	QED, INC.	AP	E M	MATHEMATICS	1
FRACTIONS PRACTICE	CONTROL DATA PUBLISHING CO.	AP	E M	MATHEMATICS	9
FRENCH VOCABULARY BUILDER	CONTROL DATA PUBLISHING CO.	AP	M H	LANGUAGES	9
FUN HOUSE MAZE	SUNBURST COMMUNICATIONS	AP	E H	PROBLEM SOLVING	L
FUNCTION GRAPHER	MATH SOFTWARE	AP	M H	MATHEMATICS	2
FUNDAMENTAL MATH I, II, III	RANDOM HOUSE, SCHOOL DIVISION	RS	E M	MATHEMATICS	4
GENETICS	TIES	AP	E M	SCIENCES	L
		AP	E M	SCIENCES	9
GEOGRAPHY	MECC	AT	E M	SOCIAL STUDIES	7
GEOGRAPHY EXPLORER: USA	INSTANT SOFTWARE	RS	M H	SOCIAL STUDIES	1
GEOLOGY SEARCH	MC GRAW HILL	AP RS	E H	SCIENCES	L
GERMAN VOCABULARY BUILDER	CONTROL DATA PUBLISHING CO.	AP	M H	LANGUAGES	9
GRAMMAR AND WRITING	ENCYCLOPEDIA BRITANNICA	AP	E	LANGUAGE ARTS	9
GRAMMAR PACKAGE I	MICRO LEARNINGWARE	RS	E	LANGUAGE ARTS	4

TITLE	PRODUCER	HRD	LEVEL	SUBJECT	SET
GRAMMAR PROBLEMS FOR PRCT.-HOM	MILLIKEN PUBLISHING COMPANY	AP	E M	LANGUAGE ARTS	4
GRAPHING EQUATIONS	CONDUIT	AP	H	MATHEMATICS	10
GRAPHS AND CHARTS	MICRO-ED	CO	E M	SCIENCES	L
GREETING CARDS	COMPUTER SKILL BUILDERS	AP	E M H	LANGUAGE ARTS	11
HAWS: HOME AUTOMATIC WEATHER STATION	VAISALA	CO	M H	SCIENCES	L
HEALTH AWARENESS GAMES	HRM SOFTWARE	AP	M P	SCIENCES	L
HEREDITY DOG	HRM SOFTWARE	AP	H	SCIENCES	L
HOME ENERGY CONSERVATION	EDUCATIONAL MATERIALS & EQ.	AP	M H	SCIENCES	L
HOME ENERGY SAVINGS	HRM SOFTWARE	AP RS	M H	SCIENCES	L
HOME SAFE HOME	MCE, INC.	AP	M H	BASIC LIVING SKILLS	1
HOMONYMS IN CONTEXT	RANDOM HOUSE, SCHOOL DIVISION	AP	E M	LANGUAGE ARTS	4
IDEA INVASION	DLM, INC.	AP	VARIES	MISC.	12
IN SEARCH OF MOST AMAZING THNG	SPINNAKER SOFTWARE	AT AP	M H	SCIENCES	L
INCOME MEETS EXPENSES	MCE, INC.	AP	M H	BASIC LIVING SKILLS	1
INSTRUCTIONAL COMPUTING: ALG-2	PINELLAS COUNTY SCHOOL SYSTEM	AP	H	MATHEMATICS	4
INTERPRETING GRAPHS	CONDUIT	AP	M H	SCIENCES	L
INTROD. TO GENERAL CHEMISTRY	COMPRESS	AP	M P	SCIENCES	L
INTRODUCTORY ALGEBRA	AVANT-GARDE CREATIONS	AP	M H	MATHEMATICS	11
JOB READINESS: ASSMT. & DEV.	MCE, INC.	AP	M H	BASIC LIVING SKILLS	1
JUGGLES' RAINBOW	THE LEARNING COMPANY	AP	P	READINESS	6
KAREL THE ROBOT	CYBERTRONICS INTERNATIONAL	AP	H	COMPUTER SCIENCE	3
KEY LINGO	READER'S DIGEST SERVICES	AP	M H	LANGUAGE ARTS	11
KEYBOARD ORGAN	ATARI PROGRAM EXCHANGE	AT	M H	MUSIC	5
KEYBOARDING FOR INFORMATION	CONTROL DATA PUBLISHING CO.	AP	E M H	BUSINESS EDUCATION	11
KINEMATICS II	VERNIER SOFTWARE	AP	M H	SCIENCES	12
KRELL'S COLLEGE BOARD SAT	KRELL	AP	H	MISC.	7
LAWS OF MOTION	EDUCATIONAL MATERIALS & EQ.	AP	M H	SCIENCES	L
LE VOCABULAIRE FRANCAIS	ISLAND SOFTWARE	AP	M H	LANGUAGES	9
LEAF: STRUCTURE & FUNCTION	CLASSROOM CONSORTIA MEDIA	IBM	M P	SCIENCES	L
LEMONADE	ATARI PROGRAM EXCHANGE	AT	E M	MATHEMATICS	5
LESSONS IN ALGEBRA	GEORGE EARL	AP	M	MATHEMATICS	6
LETTER MAN	BEHAVIORAL ENGINEERING	AP	E M	BUSINESS EDUCATION	12
LETTER RECOGNITION	HARTLEY COURSEWARE, INC.	AP	P	LANGUAGE ARTS	5
LIBRARY SKILLS: WHAT'S THERE	MICRO POWER & LIGHT CO.	AP	E M H	LIBRARIES	2
LIMACONS AND THEIR AREAS	MATH SOFTWARE	AP	H	MATHEMATICS	2
LIMITING FACTORS AND CARRYING CAPACITY	YAKER EDUCATIONAL SYSTEMS	AP	M H	SCIENCES	L
LIMITS OF SEQUENCES	MATH SOFTWARE	AP	H	MATHEMATICS	2
LOGIC AND EUCLIDEAN GEOMETRY	AVANT-GARDE CREATIONS	AP	H	MATHEMATICS	11
LOGIC GATES	TIES	AP	H	SCIENCES	11
LOLLIPOP DRAGON	SVE	AP	P	COMPUTER SCIENCE	11
MAGIC SPELLS	THE LEARNING COMPANY	AP	E M	LANGUAGE ARTS	5
MAP READING	MICRO POWER & LIGHT CO.	AP	E M	SOCIAL STUDIES	8
MASTER TYPE	LIGHTNING SOFTWARE	AP	M H	BUSINESS EDUCATION	8
MATH 1-2-3 FOUR PACK: COUNTING	MICRO-ED	CO	P	MATHEMATICS	11
MATH CONCEPTS	HARTLEY COURSEWARE, INC.	AP	E	MATHEMATICS	5
MATH FACTS/NUMBER & MATH MSTRY	COLORADO CYPHERNETICS	AP	E	MATHEMATICS	6
MATH SEQUENCES	MILLIKEN PUBLISHING COMPANY	AP	E M	MATHEMATICS	2
MATH SKILLS: ELEMENTARY	ENCYCLOPEDIA BRITANNICA	AP	E	MATHEMATICS	6
MATH SKILLS: JUNIOR HIGH	ENCYCLOPEDIA BRITANNICA	AP	M	MATHEMATICS	7

TITLE	PRODUCER	HRD	LEVEL	SUBJECT	SET
MATH STRATEGY	BEHAVIORAL ENGINEERING	AP	E M	MATHEMATICS	5
MATH STRATEGY: LINEAR SEARCH	CREATIVE PUBLICATIONS	AP	M	MATHEMATICS	3
MATHEMATICS ASSMT/PRESC 5-7	READER'S DIGEST SERVICES	AP	E M	MATHEMATICS	8
MATHEMATICS DRILL AND PRACTICE	COMPAK, INC.	AP	E M	MATHEMATICS	2
MATHEMATICS FOR SCIENCE SERIES I AND II	MERLAND SCIENTIFIC	CO PET AP	E M H	MATHEMATICS	L
MATHEMATICS LIFE SKILLS, VOL 2 WORLD OF WORK	COMPUTER AGE EDUCATION	AP	M H	MATHEMATICS	12
MATHFISH	DENNIS SONIUS	CO	E	MATHEMATICS	11
MATHWIZ	MERRITT SOFTWARE	CO	E M	MATHEMATICS	10
MATTER AND ENERGY	FOCUS MEDIA	AP RS PET CO	M H	SCIENCES	L
METRIC DRILL	HARTLEY COURSEWARE, INC.	AP	E M	MATHEMATICS	5
METRIC I TO V	CLASSROOM CONSORTIA MEDIA	IBM	M H	SCIENCES	L
MILLIKAN	MENTOR SOFTWARE, INC.	AP	H	SCIENCES	4
MIND BENDERS, A3	MIDWEST PUBLICATIONS	AP	E M H	PROBLEM SOLVING	9
MIND BENDERS, B1	MIDWEST PUBLICATIONS	AP	E M H	PROBLEM SOLVING	9
MINUS MISSION	BLM, INC.	AP	E M	MATHEMATICS	4
MIXED NUMBERS	MILTON-BRADLEY	AP	E M	MATHEMATICS	7
MODELING	MECC	AP IBM	M	SCIENCES	L
MONEY MANAGEMENT ASSESSMENT	MCE, INC.	AP	M H	BASIC LIVING SKILLS	1
MOPTOWN	THE LEARNING COMPANY	AP	E M	MATHEMATICS	7
MORE ALGEBRA: COMP	TYCOM ASSOCIATES	PET	H	MATHEMATICS	4
MORE ALGEBRA: DISC	TYCOM ASSOCIATES	PET	H	MATHEMATICS	4
MORE ALGEBRA: QUAD	TYCOM ASSOCIATES	PET	H	MATHEMATICS	4
MORE ALGEBRA: SIMUL	TYCOM ASSOCIATES	PET	H	MATHEMATICS	4
MORE ALGEBRA: SLOPE	TYCOM ASSOCIATES	PET	H	MATHEMATICS	4
MULTIPLE SKILLS	HARTLEY COURSEWARE, INC.	AP	P	LANGUAGE ARTS	6
MY FIRST ALPHABET	ATARI, INC.	AT	P	READINESS	4
NEWTON	CONDUIT	AP	H	SCIENCES	4
NICHE: AN ECOLOGICAL GAME/SIMULATION	DIVERSIFIED EDUCATIONAL ENT.	AP RS	M H	SCIENCES	L
NOUNS/PRONOUNS	HARTLEY COURSEWARE, INC.	AP	E	LANGUAGE ARTS	5
NUMBER BLAST	ATARI PROGRAM EXCHANGE	AT	E M	MATHEMATICS	4
NUMBER BOWLING/SPACE JOURNEY	SCOTT, FORESMAN & CO.	TI	E M	MATHEMATICS	12
NUMBER WORDS, LEVEL 1	HARTLEY COURSEWARE, INC.	AP	E	MATHEMATICS	6
NUMBER WORDS, LEVEL 2	HARTLEY COURSEWARE, INC.	AP	E	MATHEMATICS	6
NUMERATION 1	SCOTT, FORESMAN & CO.	TI	P E	MATHEMATICS	12
NUMERATION 2	SCOTT, FORESMAN & CO.	TI	E	MATHEMATICS	12
NUMERIC DATA ENTRY PRACTICE	RADIO SHACK EDUCATION DIVISION	RS	H	BUSINESS EDUCATION	4
NUTRITION AND FOOD GROUPS	MECC	AP IBM	M	NUTRITION	L
NUTRITION SIMULATION	EMC PUBLISHING	AP	M H	NUTRITION	12
NUTRITION TUTORIAL	EMC PUBLISHING	AP	M H	NUTRITION	12
NUTRITION-A BALANCED DIET	EDUCATIONAL MATERIALS & EQ.	AP	M H	NUTRITION	L
ODELL LAKE	MECC	AP	E M	SCIENCES	2
ODIN	ODESTA	AP	E M H	PROBLEM SOLVING	6
OH, DEER!	MECC	AP	M	SCIENCES	L
ORBIT II	VERNIER SOFTWARE	AP	M H	SCIENCES	12
OUR WEIRD & WACKY WORLD: COMP	EDUCATIONAL ACTIVITIES	AP	E	LANGUAGE ARTS	6
OUR WEIRD & WACKY WORLD: RDG	EDUCATIONAL ACTIVITIES	AP	E	LANGUAGE ARTS	6
PASSIVE TRANSPORT	CLASSROOM CONSORTIA MEDIA	IBM	E P	SCIENCES	L

TITLE	PRODUCER	HRD	LEVEL	SUBJECT	SET
PERSONAL ENERGY INVENTORY	HRM SOFTWARE	AP RS	M P	SCIENCES	L
PERSONAL GRAPHICS	LITTLE, BROWN & CO.	AP	H	COMPUTER SCIENCE	9
PHONET	TIES	AP	E	LANGUAGE ARTS	6
PHOTOSYNTHESIS LIGHT ENERGY	CLASSROOM CONSORTIA MEDIA	IBM	M P	SCIENCES	L
PHYSICAL SCI BASEBALL-CHMSTRY	J & S SOFTWARE	AP	M H	SCIENCES	L
PHYSICAL SCI PROG/BONDING	J & S SOFTWARE	AP	M	SCIENCES	L
PHYSICAL SCI PROG/RADIOACTIVIT	J & S SOFTWARE	AP	M	SCIENCES	L
PHYSICAL SCIENCE SERIES	MICROPHYS	CO AP	M	SCIENCES	L
PHYSICS GEMS, VOLUME 12	CROSS EDUCATIONAL SOFTWARE	AP	M H	SCIENCES	L
PHYSICS: ELEMENTARY MECHANICS	CONTROL DATA PUBLISHING CO.	AP	H	SCIENCES	9
PICNIC	COMPUTER SKILL BUILDERS	AP	E M H	LANGUAGE ARTS	12
PIK-PEK-PUT	DATA COMMAND	AP	E M	LANGUAGE ARTS	9
PLANT GROWTH	CLASSROOM CONSORTIA MEDIA	IBM	M P	SCIENCES	L
PLATO'S CAVE	KRELL	AP	M H	SCIENCES	L
POISON PROOF YOUR HOME	MCE, INC.	AP	M H	BASIC LIVING SKILLS	1
POLLUTE/A SIM OF WATER POLLUT	DIVERSIFIED EDUCATIONAL ENT.	AP RS IBM	H	SCIENCES	L
POND ECOLOGY	SCOTT, FORESMAN & CO.	AP	E P	SCIENCES	L
POWER GRID	HRM SOFTWARE	AP RS	M H	SCIENCES	L
PRECISION TIMER	VERNIER SOFTWARE	AP	H	SCIENCES	7
PRESCRIPTIVE MATH DRILL	HARTLEY COURSEWARE, INC.	AP	E M	MATHEMATICS	6
PRESIDENT ELECT	STRATEGIC SIMULATIONS, INC.	AP	M H	SOCIAL STUDIES	8
PROBLEM SOLVING STRATEGIES	MECC	AP	E M	PROBLEM SOLVING	L
PROCESSING POWER PROGRAM	I/CT, INC.	AP	E	LANGUAGE ARTS	11
PROJECTILES II	VERNIER SOFTWARE	AP	M H	SCIENCES	12
PROTOZOA	VENTURA EDUCATIONAL SYSTEMS	AP	M H	SCIENCES	L
PUNCTUATION SKILLS: COMMAS	MILTON-BRADLEY	AP	E M	LANGUAGE ARTS	10
PUNCTUATION SKILLS: END MARKS	MILTON-BRADLEY	AP	E M	LANGUAGE ARTS	10
PYRAMID PUZZLER	SCOTT, FORESMAN & CO.	TI	E	MATHEMATICS	12
QUIZAGON	SPRINGBOARD SOFTWARE	AP	H	MISC.	11
RAILS WEST!	STRATEGIC SIMULATIONS, INC.	AP	M H	SOCIAL STUDIES	11
RAINBOW GRAPHICS	BLUE HERRON SOFTWARE	AP	M H	COMPUTER SCIENCE	10
READ AND SOLVE MATH PROBLEMS	EDUCATIONAL ACTIVITIES	AP	E	MATHEMATICS	8
READING FLIGHT	SCOTT, FORESMAN & CO.	TI	E	LANGUAGE ARTS	7
READING RALLY	SCOTT, FORESMAN & CO.	TI	E	LANGUAGE ARTS	7
READING ROUNDUP	SCOTT, FORESMAN & CO.	TI	E	LANGUAGE ARTS	7
RHYMES AND RIDDLES	SPINNAKER SOFTWARE	AP	P	LANGUAGE ARTS	8
RIDDLE ME THIS	DATA COMMAND	AP	E M	LANGUAGE ARTS	8
ROBOT ODYSSEY I	THE LEARNING COMPANY	AP	M H	SCIENCES	L
ROCKY'S BOOTS	THE LEARNING COMPANY	AP IBM CO	E P	SCIENCES	L
		AP	E M H	SCIENCES	6
ROOTS/AFFIXES	HARTLEY COURSEWARE, INC.	AP	E M	LANGUAGE ARTS	5
SAME AND DIFFERENT	FLOPPY ENTERPRISES	AP	P	READINESS	11
SCALES	SCOTT, FORESMAN & CO.	AP	M P	SCIENCES	L
SCHOLASTIC SPELLING	SCHOLASTIC	TI	E	LANGUAGE ARTS	11
SCIENCE CHALLENGES	MICRO-ED	CO	E M	SCIENCES	L
SEM CALC: WORD PROBLEM SOLVER	SUNBURST COMMUNICATIONS	RS AP AT	M H	PROBLEM SOLVING	L
SENTENCE DIAGRAMMING	AVANT-GARDE CREATIONS	AP	M H	LANGUAGE ARTS	4
SENTENCES	MICRO POWER & LIGHT CO.	AP	M H	LANGUAGE ARTS	4
SHIP AHOY/WORD SCRAMBLE	COMPUTER SKILL BUILDERS	AP	E M H	LANGUAGE ARTS	12
SIMPLE MACHINES	MICRO ED	CO	E M H	SCIENCES	L
SIMS	TIES	AP	E	LANGUAGE ARTS	6
SKY TRAVEL: A WINDOW TO OUR GALAXY	COMMODORE	CO	M H	SCIENCES	L

TITLE	PRODUCER	HRD	LEVEL	SUBJECT	SET
SOCIAL STUDIES, VOLUME 2	MECC	AP	M H	SOCIAL STUDIES	8
SPANISH VOCABULARY BUILDER	CONTROL DATA PUBLISHING CO.	AP	M H	LANGUAGES	9
SPECIAL NEEDS VOLUME 1: SPLLNG	MECC	AP	E	LANGUAGE ARTS	9
SPECIAL PRODUCTS & ALG. FACTOR	AVANT-GARDE CREATIONS	AP	H	MATHEMATICS	11
SPEED READER	DAVIDSON AND ASSOCIATES	AP	M H	LANGUAGE ARTS	5
SPEED/BINGO MATH	COMMODORE	CO	E M	MATHEMATICS	11
SPELLING STRATEGY	BEHAVIORAL ENGINEERING	AP	E M	LANGUAGE ARTS	5
SPELLING WIZ	DLM, INC.	AP	E	LANGUAGE ARTS	10
SPORTS STATS	TIES	AP	M H	PHYSICAL EDUCATION	9
STAR MAZE	SCOTT, FORESMAN & CO.	TI	E	MATHEMATICS	12
STAR SEARCH	EARTHWARE COMPUTER SERVICES	AP	M H	SCIENCES	L
STELLAR ASTRONOMY	CROSS EDUCATIONAL SOFTWARE	AP	M H	SCIENCES	L
STICKYBEAR ABC	WEEKLY READER FAMILY SOFTWARE	AP	P	LANGUAGE ARTS	11
STICKYBEAR NUMBERS	WEEKLY READER FAMILY SOFTWARE	AP	P	MATHEMATICS	9
STORY MACHINE	SPINNAKER SOFTWARE	AP	P	LANGUAGE ARTS	8
SUBTRACTING MIXED FRACTIONS	MICROCOMPUTER WORKSHOPS	AP	E M	MATHEMATICS	10
TANK TACTICS	DATA COMMAND	AP	E M H	LANGUAGE ARTS	9
TEASERS BY TOBBS	SUNBURST COMMUNICATIONS	AP	E M	MATHEMATICS	8
TELLSTAR	SCHARF SOFTWARE SYSTEMS	AP	M H	SCIENCES	12
TEMPERATURE GRAPHER	HRM SOFTWARE	AP	M H	SCIENCES	L
TENNIS ANYONE?	DATA COMMAND	AP	E M	LANGUAGE ARTS	8
TEST BANK	ADVANCED TECHNOLOGY APPLIC.	RS	E M H	TESTING	5
THAT'S MY STORY	LEARNING WELL	AP IBM	E M H	LANGUAGE ARTS	12
THE ANTONYM GAME	J & S SOFTWARE	AP	H	LANGUAGE ARTS	10
THE ARITHMETIC CLASSROOM: DEC	STERLING SWIFT	AP	E M	MATHEMATICS	5
THE ARITHMETIC CLASSROOM: FRAC	STERLING SWIFT	AP	E M	MATHEMATICS	5
THE ATOM	MICRO-ED	AP	M	SCIENCES	6
THE DECISION SHOP	THE CHILDREN'S MUSEUM OF IND.	AP	E M	SOCIAL STUDIES	7
THE EXPLORING AMERICA SERIES	AQUARIUS	AP	M H	SOCIAL STUDIES	9
THE FACTORY	SUNBURST COMMUNICATIONS	AT AP CO RS IBM	E H	PROBLEM SOLVING	L
		AT	E M H	PROBLEM SOLVING	9
THE FOOD PROCESSOR	ESHA RESEARCH	AP	M H	NUTRITION	L
THE GERMAN/RUSSIAN HANGMAN	GEORGE EARL	AP	H	LANGUAGES	9
THE HEART STIMULATOR	FOCUS MEDIA	AP	E H	SCIENCES	L
THE INCREDIBLE LABORATORY	SUNBURST COMMUNICATIONS	AT AP CO	E P	SCIENCES	L
THE KING'S RULE	SUNBURST COMMUNICATIONS	AP CO RS	E M H P	MATHEMATICS	L
THE MARKET PLACE	MECC	AT	E M	SOCIAL STUDIES	7
THE MEDALIST - STATES	HARTLEY COURSEWARE, INC.	AP	E M	SOCIAL STUDIES	11
THE MICRO GARDENER	EDUCATIONAL ACTIVITIES INC.	AP	E P	SCIENCES	L
THE MONEY MANAGER	STERLING SWIFT	AP	H	BUSINESS EDUCATION	10
THE PROGRAMMABLE CUBE	METACOMET SOFTWARE	AP	H	COMPUTER SCIENCE	6
THE REEF OF GOLD	ENCYCLOPEDIA BRITANNICA	AP	E	LANGUAGE ARTS	11
THE SCIENTIFIC METHOD	CYGNUS SOFTWARE	AP	M H	SCIENCES	L
THE SHELL GAMES	APPLE COMPUTER	AP	E M H	TEACHER UTILITY	1
THE SKIES ABOVE/THE WATERS BELOW	AQUARIUS	AP	E M H	SCIENCES	L
THE SPANISH HANGMAN	GEORGE EARL	AP	M H	LANGUAGES	4
THE VOYAGE OF THE MINI: MAPS AND NAVAGATION	HOLT, RINEHART & WINSTON	AP	E M	SCIENCES	L
THE WESTING GAME	SUNBURST COMMUNICATIONS	AP	M	LANGUAGE ARTS	8

TITLE	PRODUCER	HRD	LEVEL	SUBJECT	SET
THE WIZARD	PROGRAMS UNLIMITED	RS	M H	TEACHER UTILITY	3
THE WORM	VENTURA EDUCATIONAL SYSTEMS	AP	M H	SCIENCES	L
THINK LIKE A SCIENTIST	MICRO LEARN	AP CO IBM	E H	SCIENCES	L
THREE MILE ISLAND	MUSE SOFTWARE	AP	H	SCIENCES	6
TIME & SEASONS	RAND MCNALLY AND COMPANY	AP AT	M H	SCIENCES	L
TITRATION	MENTOR SOFTWARE, INC.	AP	H	SCIENCES	4
TOUCH TYPING	COVE VIEW PRESS SOFTWARE	RS	M H	BUSINESS EDUCATION	4
TRIBBLES	CONDUIT	AP	M H	SCIENCES	12
TYPING STRATEGY	BEHAVIORAL ENGINEERING	AP	M H	BUSINESS EDUCATION	12
TYPING TUTOR	MICROSOFT CONSUMER PRODUCTS	AP	M H	BUSINESS EDUCATION	2
U.S. CONSTITUTION TUTOR	MICRO LEARN	CO	M H	SOCIAL STUDIES	11
VECTOR ADDITION II	VERNIER SOFTWARE	AP	M H	SCIENCES	12
VECTORS AND GRAPHING, VOL. 1	CROSS EDUCATIONAL SOFTWARE	AP	H	SCIENCES	11
VERB VIPER	DLM, INC.	AP	E	LANGUAGE ARTS	9
VERBS	HARTLEY COURSEWARE, INC.	AP	E	LANGUAGE ARTS	5
VISIBLE SOLAR SYSTEM	COMMODORE	CO	E M	SCIENCES	L
VISIFROG	VENTURA EDUCATIONAL SYSTEMS	AP	M H	SCIENCES	L
VOCABULARY DOLCH	HARTLEY COURSEWARE, INC.	AP	P	LANGUAGE ARTS	5
VOCABULARY I, PLURALS, SENT.	COLORADO CYPHERNETICS	AP	E M	LANGUAGE ARTS	10
VOCABULARY SKILLS: CONTEXT CLU	MILTON-BRADLEY	AP	M	LANGUAGE ARTS	8
VOCABULARY SKILLS: PREF,SUF,RT	MILTON-BRADLEY	AP	M	LANGUAGE ARTS	8
VOLCANOES	EARTHWARE COMPUTER SERVICES	AP	H	SCIENCES	3
VOWELS	HARTLEY COURSEWARE, INC.	AP	E	LANGUAGE ARTS	6
WATER POLLUTION	EDUCATIONAL MATERIALS & EQ.	AP RS	M H	SCIENCES	L
WAVE ADDITION II	VERNIER SOFTWARE	AP	H	SCIENCES	12
WEATHER	SCOTT, FORESMAN & CO.	AP	H P	SCIENCES	L
WEATHER COMMAND:A SCIENCE GAME	EDUCATIONAL AUDIO VISUAL	AP	E H	SCIENCES	L
WEATHER FACTORS	MICRO-ED	CO	E M H	SCIENCES	L
WHAT'S IN YOUR LUNCH	LAWRENCE HALL OF SCIENCE	AP PET AT CO	M H	NUTRITION	L
WHO, WHAT, WHERE, WHEN	HARTLEY COURSEWARE, INC.	AP	E	LANGUAGE ARTS	6
WHOLE NUMBERS PRACTICE	CONTROL DATA PUBLISHING CO.	AP	E M	MATHEMATICS	9
WIZ WORKS	DLM, INC.	AP	VARIES	MISC.	12
WORD FAMILIES	HARTLEY COURSEWARE, INC.	AP	P	LANGUAGE ARTS	5
WORD GAMES	MECC	AT	E	LANGUAGE ARTS	7
WORD INVASION	DLM, INC.	AP	E M	LANGUAGE ARTS	9
WORD MASTER	DLM, INC.	AP	M	LANGUAGE ARTS	8
WORD MEMORY PROGRAM	I/CT, INC.	AP	P	LANGUAGE ARTS	8
WORD RADAR	DLM, INC.	AP	P	LANGUAGE ARTS	10
WORD SEARCH	HARTLEY COURSEWARE, INC.	AP	E	LANGUAGE ARTS	5
WORDMAN	DLM, INC.	AP	E	LANGUAGE ARTS	9
WORDWATCH	INSTANT SOFTWARE	RS	M	LANGUAGE ARTS	4
WORDWRIGHT	ENCYCLOPEDIA BRITANNICA	AP	E M H	LANGUAGE ARTS	7
YOU CAN BANK ON IT	MCE, INC.	AP	M H	BASIC LIVING SKILLS	1
YOUR BODY - SERIES I & II	FOCUS MEDIA	AP RS PET CO	E H	SCIENCES	L